VSMP Administrative Guidance Manual

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1.0 Introduction

This Administrative Guidance Manual (Manual) was prepared for Campbell County, the VSMP Authority, to comply with 9VAC25-870-148 – VSMP and erosion and sediment control administrative requirements to implement and enforce the regulations and includes guidance for reviewing stormwater pollution prevention plans (SWPPPs), obtaining and releasing of bonds, completing site inspections, reporting and recordkeeping, enforcement, and long-term maintenance and inspection programs.

This manual is also intended to provide guidance to the development community regarding requirements and expectations for erosion and sediment control and stormwater management plan submittals, in accordance with 9VAC25-840 and 9VAC25-870, respectively.

For reference, the Virginia Stormwater Management Act (§62.1-44.15:24 et seq), the VSMP Regulations (9VAC25-870), and Campbell County's Stormwater Management Ordinance can be found in Appendix A, B, and C, respectively. Please note the Virginia law and regulations provided may not be the latest; refer to http://townhall.virginia.gov/L/ViewBoard.cfm?BoardID=103 for the latest documents.

The information contained in this document is subject to change without notification and may be updated for compliance with any subsequent changes in laws and regulations.

2.0 Applicability

2.1 Single-Family Residential Dwelling Land-Disturbing Activity

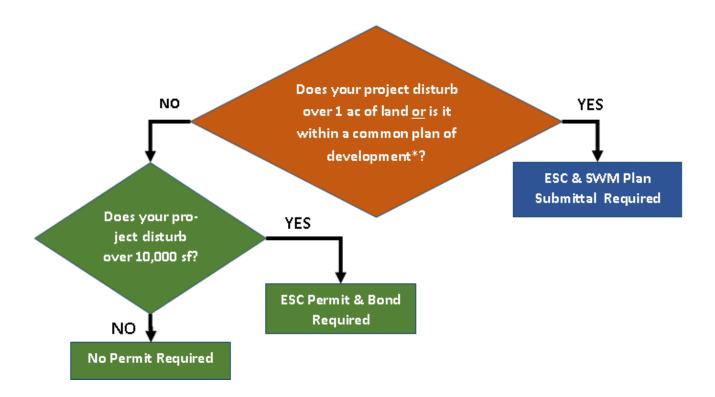
- 2.1.1 <u>Agreement-in-lieu-of</u>: The construction of a single family detached residential structure, with or outside of a common plan of development or sale, equal to or less than 5 acres, may be eligible for an agreement in-lieu-of a stormwater management plan. This agreement shall not require a registration statement or the Department's portion of the state permit fee for coverage under the General Permit for Discharges of Stormwater from Construction Activities (General Permit).
- 2.1.2 Requirements: Even though a registration statement for coverage under the General Permit is not required for such a structure, the land-disturbing activity must adhere to the requirements of the General Permit, including, but not limited to preparation of an Erosion and Sediment Control Plan, a Stormwater Management Plan (quality and quantity controls), a Pollution Prevention Plan, long-term maintenance agreement, and construction record drawing.

At the discretion of the locality, an agreement in-lieu-of may waive the requirements for the plans and/ or construction record drawing to be signed by a licensed professional. If the VSMP Authority waives the requirements for a licensed professional to complete the plans and/or construction record drawings, then subsequent references to the requirement of a licensed professional seal and signature in the Administrative Guidance Manual and its appendices shall also be waived.

2.2 All Other Land-Disturbing Activities

Pursuant to § 62.1-44.15:34 of the Code of Virginia, a stormwater management (SWM) plan and related submittals are required if a <u>land-disturbing activity</u>, which is not a single-family residential dwelling land-disturbing activity, is

- 1. Equal to or greater than one (1) acre, and/or
- 2. Part of a Common Plan of Development or Sale (*Refer to section 3.1 below for exceptions and additional information).



3.0 Supplemental Guidance

3.1 Common Plan Of Development or Sale

As per the Virginia Department of Environmental Quality Virginia Stormwater Management Program (VSMP) Frequently Asked Questions (FAQ), the following provides clarification regarding applicability of the common plan of development or sale clause in the VSMP regulations.

- 3.1.1 <u>Definition of a 'Plan' in a Common Plan of Development:</u> 9VAC25-870-10 (Definitions) of the VSMP regulations describes a common plan of development as "a contiguous area where separate and distinct construction activities may be taking place at different times on different schedules." Examples of these "common plans of development" meeting this definition include site plans and subdivision plans as defined in § 15.2-2201 (Definitions) of the Planning, Subdivision of Land and Zoning chapter of the Code of Virginia, or as defined by a locality in an ordinance adopted pursuant to this chapter.
- 3.1.2 Applicability: Individual lots within existing residential, commercial or industrial site plans and subdivision plans that were platted prior to July 1, 2004 may be considered separate land-disturbing activities and require a local VSMP permit and/or a registration statement under the General Permit, except as noted in 3.1.4. July 1, 2004 is the date that provisions for common plans of development were first incorporated into the Virginia Stormwater Management Act. Previous to that date,

the term was not used or defined. Lots within such platted plans or subdivisions that disturb less than one acre do not have to obtain coverage under 2014 Construction General Permit. Lots within such platted plans or subdivisions that disturb one acre or greater would have to obtain coverage under the 2014 Construction General Permit.

- 3.1.3 <u>Options for Compliance</u>: If a local VSMP permit is deemed required for the land disturbance within a 'common plan of development', the applicant has two options:
 - 1) transfer the original VSMP from the developer to the applicant or
 - 2) apply for new permit coverage.
- 3.1.4 <u>Exceptions</u>: The VSMP Authority may elect to waive permit coverage under the following situations.
 - Single-Family Homes: For land distributing activity less than 1 acre and within a common plan of development, where the stormwater management plan for the larger common plan of development or sale provides permanent control measures (ie. stormwater management facilities for quantity and quality controls) encompassing the single family residence in accordance with 9VAC25-880-50, the state will authorize coverage automatically (no registration statement is needed) and the Applicant will not have to pay the Department (DEQ) portion of fee.
 - 2) When the 'common plan of development' construction documents and SWPPP accounted for stormwater management (quantity and quality) for the entire development, including grading plans and footprints of impervious surfaces for individual lots.
 - 3) If less than one acre remains of the original common plan, the individual project may be treated as part of a less than one acre development and no permit would be required.

3.2 TMDL Specific Requirements

Bedford	Big Otter River	Final	Bacteria	Livestock access to streams, lack of streamside buffer/forest,
bedioid	big Otter River	гиа	вастепа	agricultural runof, Straight pipes and failing septic systems
				Agricultural streamside fencing, agricultural land based
				reduction BMPs, Environmental quality incentives program,
Bedford	<u>James River</u>	Final	Bacteria	Chesapeake Bay watershed initiative, improve residential
				septic systems, reduce pet waste, CSO/Stormwater control
				measures

3.1 Exemptions

As per the Code of Virginia § 62.1-44.15:34 (<u>Link to Code</u>), "...the following activities are exempt, unless otherwise required by federal law."

- 3.1.1 Permitted surface or deep mining operations and projects, or oil and gas operations and projects conducted under the provisions of Title 45.1.
- 3.1.2 Clearing of lands specifically for agricultural purposes and the management, tilling, planting, or harvesting of agricultural, horticultural, or forest crops, livestock feedlot operations, or as additionally set forth by the Board in regulations, including engineering operations as follows: construction of terraces, terrace outlets, check dams, desilting basins, dikes, ponds, ditches, strip cropping, lister furrowing, contour cultivating, contour furrowing, land drainage, and land irrigation; however, this exception shall not apply to harvesting of forest crops unless the area on which harvesting occurs is reforested artificially or naturally in accordance with the provisions of Chapter 11 (§ 10.1-1100 et seq.) or is converted to bona fide agricultural or improved pasture use as described in subsection B of § 10.1-1163.
- 3.1.3 Single-family residences separately built and disturbing less than one acre including additions or modifications to existing single-family detached residential structures, except for those within a larger common plan of development or sale.
- 3.1.4 Land-disturbing activities that disturb less than one acre of land area except for1) land-disturbing activity exceeding an area of 2,500 square feet in all areas of the jurisdictions designated as subject to the Chesapeake Bay Preservation Area Designation and Management Regulations adopted pursuant to the provisions of the Chesapeake Bay Preservation Act (§ 62.1-44.15:67 et seq.) or 2) activities that are part of a larger common plan of development or sale, where the land-disturbance activity within the larger common plan of development or sale (not the individual land disturbance) is one acre or greater of disturbance.
- 3.1.5 Discharges to a sanitary sewer or a combined sewer system.
- 3.1.6 Activities under a State or federal reclamation program to return an abandoned property to an agricultural or open land use.
- 3.1.7 Routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original construction of the project. The paving of an existing road with a compacted or impervious surface and reestablishment of existing associated ditches and shoulders shall be deemed routine maintenance if performed in accordance with this subsection.

3.1.8 Conducting land-disturbing activities in response to a public emergency where the related work requires immediate authorization to avoid imminent endangerment to human health or the environment. In such situations, the VSMP Authority shall be advised of the disturbance within seven days of commencing the land-disturbing activity and compliance with the administrative requirements of subsection A is required within 30 days of commencing the land-disturbing activity.

3.2 Exceptions

- 3.2.1 The Authority may grant exceptions to the provisions of Part II B or Part II C of 9VAC25-870. An exception may be granted provided that (i) the exception is the minimum necessary to afford relief, (ii) reasonable and appropriate conditions shall be imposed as necessary upon any exception granted so that the intent of the Act and this chapter are preserved, (iii) granting the exception will not confer any special privileges that are denied in other similar circumstances, and (iv) exception requests are not based upon conditions or circumstances that are self-imposed or self-created.
- 3.2.2 Economic hardship alone is not sufficient reason to grant an exception from the requirements of this chapter.
- 3.2.3 Under no circumstance shall the VSMP Authority grant an exception to the requirement that the land-disturbing activity obtain required state permits, nor approve the use of a BMP not found on the Virginia Stormwater BMP Clearinghouse Website, except where allowed under Part II C (9VAC25-870-146 et seq.) of this chapter.
- 3.2.4 Exceptions to requirements for phosphorus reductions shall not be allowed unless offsite options available through 9VAC25-870-69 have been considered and found not available.
- 3.2.5 A record of all exceptions granted shall be maintained by the VSMP Authority in accordance with 9VAC25-870-126.

3.3 Licensed Professional

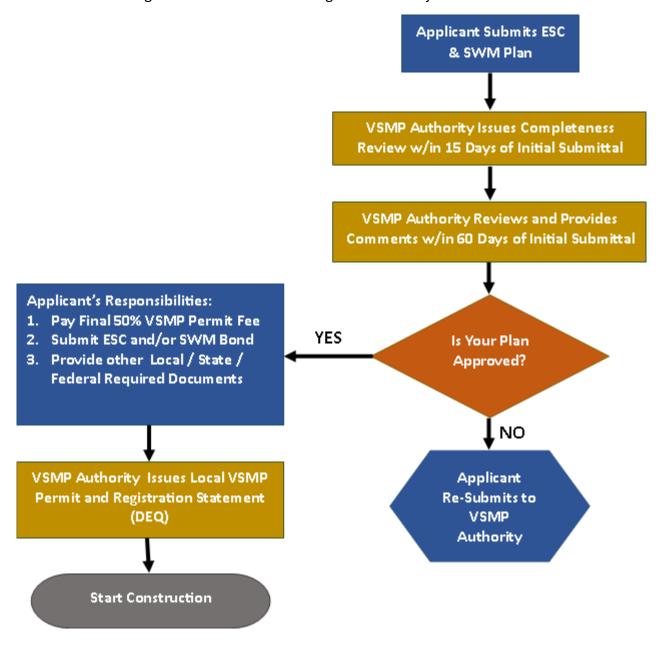
3.3.1 A Licensed Professional must certify the sections required by 9VAC25-870 and this document and shall be registered in the Commonwealth of Virginia pursuant to Article 1 (§54.1-400 et seq.) of Chapter 4 of Title 54.1 of the Code of Virginia; this provision may be waived for an agreement-in-lieu-of plan. A Licensed Professional means one of the following: Professional engineer, land surveyor, architect, and landscape architect.

4.0 General SWM Plan Review Guidance

4.1 Process Description

The VSMP Project Process Plan provided in Appendix D is provided as a quick reference guide responsibilities and requirements of the Applicant (and Owner) and the Authority regarding plan approval, construction inspection, and post-construction inspections for a project, except as noted in section 2.1.

The following is a flow chart summarizing the VSMP Project Process Plan.



4.2 Application for Coverage under the General Permit for Discharges of Stormwater from Construction Activities

Refer to responsibilities and notes provided in the VSMP Project Process Plan. The Department portion of the General Permit fee is provided in the Campbell County Stormwater Management Ordinance and shall be payable to Campbell County. A copy of the General Permit and Registration Statement can be found in Appendix E and F, respectively.

4.3 Local VSMP Permit Fees

Refer to responsibilities and notes provided in the VSMP Project Process Plan A summary of the local VSMP permit stormwater fees is provided in the Campbell County Stormwater Management Ordinance.

In addition to the local VSMP fees, the Authority may elect to impose an additional fee to complete reviews beyond the initial, first, and second (a total of three (3)) submittals of a project. In accordance with §62.1-44.15.36, this fee will be assessed as per the hourly rate of the reviewing agency to a maximum of \$1,000.

4.4 Erosion and Sediment Control and Stormwater Management Plan Application Form & Checklist

Refer to responsibilities and notes provided in the VSMP Project Process Plan. The Erosion and Sediment Control and Stormwater Management Plan Application Form & Checklist can be found in Appendix G.

4.5 Completeness Review Form

Refer to responsibilities and notes provided in the VSMP Project Process Plan. The Completeness Review Form can be found in Appendix H.

5.0 Stormwater Pollution Prevention Plan

The Applicant must provide a Stormwater Pollution Prevention Plan (SWPPP) in accordance with 9VAC25-870-54, including but not limited to, an approved erosion and sediment control plan, an approved stormwater management plan, and a pollution prevention plan. For the convenience of the Applicant and the Authority reviewing the plan a Comprehensive SWPPP template is provided in Appendix I for the narrative portions of the SWPPP. The Applicant is encouraged to use this format to complete the required sections of the SWPPP.

NOTE: Sections 1 -Site Information, 2-Erosion and Sediment Control, 3-Pollution Prevention, and 4-Stormwater Management of the Comprehensive SWPPP are required for the plan review submittal, as noted below. Sections 5 – Construction Inspections and Maintenance, 6-Training, and 7-Final Stabilization of the Comprehensive SWPPP are not required to be completed at time of plan review submittal. However, these sections must be completed by the Applicant and/or the Contractor prior to construction. The Comprehensive SWPPP must be available at the construction site at all times during construction.

5.1 Erosion and Sediment Control Plan

The Applicant must provide the Authority a complete report, including narrative and calculations, as required, and plans meeting the requirements and provisions of the Campbell County Stormwater Management Ordinance and Section 1 of the Erosion and Sediment Control and Stormwater Management Plan Application Form & Checklist (Appendix G).

Erosion control notes are required to be included on the plans. These notes are provided in Appendix J.

5.1.1 Review Guidance

- 5.1.1.1 Report: If the Applicant uses the 'Comprehensive SWPPP' template, the Authority should confirm sections 1 and 2 are completed as noted below. If the Applicant submits the report in a different format, the Authority shall confirm the information in Section 1 of the Erosion and Sediment Control and Stormwater Management Plan Checklist and the items listed below are provided.
 - a. Refer to text within [] in Comprehensive SWPPP template for additional information and guidance.
 - b. Comprehensive SWPPP Template

<u>SECTION 1: SITE INFORMATION</u> - All sub-sections of Section 1 of the SWPPP template are to be completed by Applicant with the initial plan

submittal, except Section 1.2 items 1-Operator(s), 2-Site Supervisor(s), 3-Stormwater Manager and SWPPP Contact(s), 5-Subcontractor(s), 6-Responsible Land Disturber, and 7-Emergency 24 Hour Contact.

However, Section 1.2 items 1, 2, 3, 5, 6, and 7 must be provided prior to construction.

<u>SECTION 2: EROSION AND SEDIMENT CONTROL</u> - All sections are to be completed by Applicant with the initial plan submittal.

- a. For Section 2.8 Structural Practices and Section 2.9 Vegetative Practices, the Applicant may either note 'not applicable' or delete those practices not required for the project.
- b. Confirm calculations are provided in the Appendix or elsewhere in the report for the following practices.
 - 1. Diversion (3.12)
 - 2. Temporary sediment trap(s) (3.13)
 - 3. Temporary sediment basin(s) (3.14)
 - 4. Paved Flume (3.16)
 - 5. Stormwater conveyance channel(s) (3.17)
 - 6. Outlet Protection (3.18)
 - 7. Level Spreader (3.21)
 - 8. Temporary Vehicular Stream Crossing (3.24)
 - 9. Subsurface Drain (3.28)
- c. Spot check the calculations for accuracy.
- d. Confirm Section 2.11 Phased Construction Activities is completed.
- e. Confirm the Section 2 Required Certification is signed and sealed by a Licensed Professional registered in the Commonwealth of Virginia pursuant to Article 1 (§54.1-400 et seq.) of Chapter 4 of Title 54.1 of the Code of Virginia.
- 5.1.1.2 Plans: The Authority shall confirm the appropriate erosion and sediment control practices are proposed and, if so, designed in accordance with the Virginia Erosion and Sediment Control Handbook, Latest Edition (Handbook); refer to the standards and specifications found in the Handbook.
 - a. Confirm details for each proposed practice is provided.
 - b. Confirm general erosion and sediment control notes are provided.
 - c. Confirm compliance with Section 1 of the Stormwater Management Plan Checklist.
 - d. Confirm plans are signed and sealed by a Licensed Professional.

5.1.1.3 Resources

a. Virginia Erosion and Sediment Control Handbook:
 http://www.deq.state.va.us/Programs/Water/StormwaterManagement/P
 ublications/ESCHandbook.aspx

5.2 Stormwater Management Plan

The Applicant must provide the Authority a complete report, including narrative and calculations, as required, and plans meeting the requirements and provisions of the Campbell County Stormwater Management Ordinance nd the Erosion and Sediment Control and Stormwater Management Plan Application Form & Checklist.

5.2.1 Review Guidance

- 5.2.1.1 Report: If the Applicant uses the 'Comprehensive SWPPP' template, the Authority should confirm Sections 1 -Site Information, 2-Erosion and Sediment Control, 3-Pollution Prevention, and 4-Stormwater Management are completed. If the Applicant submits the report in a different format, the Authority shall confirm the information in Section 4 of the Comprehensive SWPPP, Section 2 of the Erosion and Sediment Control and Stormwater Management Plan Checklist, and the items listed below are provided.
 - a. Refer to text within [] in Comprehensive SWPPP template for additional information and guidance.
 - b. Confirm the required calculations are provided in the Appendix or elsewhere in the report.
 - c. Spot check the calculations for accuracy.
 - d. Confirm the Report is certified and is signed and sealed by a Licensed Professional registered in the Commonwealth of Virginia pursuant to Article 1 (§54.1-400 et seq.) of Chapter 4 of Title 54.1 of the Code of Virginia.
- 5.2.1.2 Plans: The Authority shall confirm the appropriate stormwater practices are proposed and, if so, designed in accordance with the Virginia Stormwater BMP Clearinghouse. http://wwrrc.vt.edu/swc/
 - a. Confirm details for each proposed practice are provided.
 - b. Confirm required notes are provided.

- c. Confirm compliance with Section 2 of the Erosion and Sediment Control and Stormwater Management Plan Checklist.
- d. Confirm plans are signed and sealed by a Licensed Professional registered in the Commonwealth of Virginia pursuant to Article 1 (§54.1-400 et seq.) of Chapter 4 of Title 54.1 of the Code of Virginia.
- e. Only the BMPs included in the Virginia Stormwater BMP Clearinghouse are permitted; localities shall not approve the use of BMPs not included in the Clearinghouse.

5.2.2 Technical Requirements

NOTE: If the project is deemed 'Grandfathered' as per the Regulations, Part II C technical criteria found in 9VAC25-870 shall apply.

- 5.2.2.1 General Stormwater Management and BMP Design Guidance
 - a. DRAFT Virginia Stormwater Management Handbook (2nd Edition, 2013)

5.2.2.2 Runoff Reduction Method

- a. <u>Runoff Reduction Method Compliance Spreadsheets:</u> Refer to Appendix K.
- b. <u>Examples and Guidance:</u> Chapter 12 of the DRAFT Virginia Stormwater Management Handbook (2nd Edition, 2013)

5.2.2.3 Energy Balance Equation

a. <u>Chapter 11.6 – Water Quantity Control</u> of the DRAFT Virginia Stormwater Management Handbook (2nd Edition, 2013)

5.2.2.4 Karst Guidance

a. <u>Stormwater Design Guidelines for Karst Terrain in Virginia</u>, Appendix 6-B, of the DRAFT Virginia Stormwater Management Handbook (2nd Edition, 2013)

5.2.3 Allowable Calculation Methodologies

5.2.3.1 Hydrologic

- a. For sites with watersheds exceeding 200 acres, the Soil Conservation Service (SCS) based methodology (TR-55 or TR-20) should be used for the design of stormwater management/BMP facilities.
- b. If a site is less than 200 acres, SCS based methodology is preferred; however, modified rational method or rational method may be use at the discretion of the VSMP Authority.
- c. The modified runoff curve number as provided by the runoff reduction spreadsheet for each drainage area should be used for water quantity calculations.

5.2.3.2 Hydraulic

a. <u>Appendix 11-D – Stormwater Computer Models</u> of the DRAFT Virginia Stormwater Management Handbook (2nd Edition, 2013)

5.2.4 Other Resources

- 1. BMP Clearinghouse: http://vwrrc.vt.edu/SWC/
- Hydrologic Unit Code: http://www.deq.virginia.gov/mapper_ext/default.aspx?service=public/wi mby
- 3. Soils Maps: http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm
- 4. Rainfall Values: http://hdsc.nws.noaa.gov/hdsc/pfds/pfds map cont.html?bkmrk=va

5.3 Pollution Prevention Plan

A Pollution Prevention Plan must be completed prior to construction by either the Applicant or Contractor and must be included in the SWPPP located at the project site during construction. Refer to the Comprehensive SWPPP template also found in Appendix I.

The Authority is not required to review the Pollution Prevention Plan for plan approval.

5.3.1 Review Guidance

- 5.3.1.1 Refer to text within [] in Comprehensive SWPPP template for additional information and guidance.
- 5.3.1.2 Pollution Prevention Plan, required by 9VAC25-870-56, shall be developed, implemented, and updated as necessary and must detail the design, installation, implementation, and maintenance of effective pollution prevention measures to minimize the discharge of pollutants. At a minimum, such measures must be designed, installed, implemented, and maintained to:
 - 1. Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;
 - 2. Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, and other materials present on the site to precipitation and to stormwater; and
 - 3. Minimize the discharge of pollutants from spills and leaks and implement chemical spill and leak prevention and response procedures.
 - 4. The pollution prevention plan shall include effective best management practices to prohibit the following discharges:
 - 5. Wastewater from washout of concrete, unless managed by an appropriate control;
 - 6. Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials;
 - 7. Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance; and
 - 8. Soaps or solvents used in vehicle and equipment washing.
 - 9. Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, are prohibited unless managed by appropriate controls.

6.0 Other VSMP Permit Requirements

6.1 Long-Term Stormwater Facility Maintenance Agreement

A Long-Term Stormwater Facility Maintenance Agreement (Appendix L) <u>must be submitted by the Applicant and approved by the Authority prior to review and approval prior to the approval of the stormwater management plan</u>. Refer to responsibilities and notes provided in the VSMP Project Process Plan.

6.2 Erosion and Sediment Control and Stormwater Management Bonds / Letters of Credit

An Erosion and Sediment Control and Stormwater Management Bonds / Letters of Credit <u>must</u> <u>be submitted by the Applicant and approved by the Authority prior to issuance of the VSMP permit for construction</u>. The Applicant shall use the <u>Erosion and Sediment Control and Stormwater Management Bond calculator</u> also provided in Appendix M to determine the amount required for the bond or letter of credit. Refer to responsibilities and notes provided in the VSMP Project Process Plan.

Notes:

- 1. Bonds are not required for single family homeowners if the total land disturbance is less than five (5) acres.
- 2. The bond shall be provided for both erosion and sediment control and stormwater management; separate bonds will not be accepted.

7.0 Construction Inspections

Refer to responsibilities and notes provided in the VSMP Project Process Plan. A VSMP Permit & SWPPP Construction Inspection Report form is provided in Appendix N.

7.1 Resources

- 7.1.1 Virginia Erosion and Sediment Control Handbook:

 http://www.deq.state.va.us/Programs/Water/StormwaterManagement/Publications/ES

 CHandbook.aspx
- 7.1.2 Stormwater management facilities construction guidance BMP Clearinghouse: http://vwrrc.vt.edu/SWC/

8.0 Construction Closeout Documentation

8.1 Stormwater Management Facility Construction Record Report Requirements

Refer to responsibilities and notes provided in the VSMP Project Process Plan and the Construction Record Drawing Checklist for Permanent Stormwater Management Facilities (Appendix O).

8.2 Project Completion Form

Refer to responsibilities and notes provided in the VSMP Project Process Plan and the VSMP Project Completion Form (Appendix P).

8.3 Release of Erosion and Sediment Control and Stormwater Management Bonds / Letters of Credit

Refer to responsibilities and notes provided in the VSMP Project Process Plan.

9.0 Post-Construction Inspections

As per the recorded Long-Term Stormwater Management Facility Maintenance Agreement and the Campbell County Stormwater Management Ordinance, Campbell County shall enforce compliance of the post-construction inspections via use of a tracking program (TBD). The Post-Construction Inspection Checklist_(Appendix Q) for the relevant BMP(s) shall be used to document post-construction inspections.

9.1 Inspection Frequency

Table 9.1 – Stormwater Management BMP Inspection Frequencies

ВМР		Minimum	
Classification	BMP Type	Inspection Schedule	Notes
1	Rooftop	Every 5 Years	Owner shall inspect and
	Disconnection		provide documentation as
1	Sheetflow to	Every 5 Years	per the requirements found
	Vegetated Filter		on the Virginia Stormwater
	or Conserved		BMP Clearinghouse Website
	Open Space		and the Administrative
1	Grass Channel	Every 5 Years	Guidance Manual for BMPs,
1	Soil Amendments	Every 5 Years	except for BMP
2	Permeable	Annually	Classification 1 facilities,
	Pavement		where Campbell County will
2	Infiltration	Annually	be responsible for
2	Bioretention	Annually	inspection. Campbell
2	Dry Swale	Annually	County will inspect all BMPs
2	Wet Swale	Annually	every 5 years.
2	Filtering Practice	Annually	
2	Constructed	Annually	
	Wetland		
2	Wet Pond	Annually	
2	Extended	Annually	
	Detention Pond		
3	Vegetated Roof	Twice per year	
		(Spring/Fall)	
3	Rainwater	Twice per year	
	Harvesting	(Spring/Fall)	
4	Manufactured/	Yearly or per	Owner shall inspect and
	Other BMP	manufacturer	provide documentation
		recommendations,	according to manufacturer's
		whichever is more	guidelines and the
		frequent.	Administrative Guidance
			Manual.

9.2 Review Guidance

The Virginia Stormwater BMP clearinghouse (http://vwrrc.vt.edu/swc/) contains updated specifications including maintenance and inspection guidelines for accepted practices within the Commonwealth of Virginia.

10.0 Reporting and Recordkeeping Guidance

10.1 Annual Reporting

On a fiscal year basis (July 1 to June 30), Campbell County shall report to the Department by October 1 of each year, in a format provided by the Department, the following information.

- 1. Information on each permanent stormwater management facility completed during the fiscal year to include type of stormwater management facility, geographic coordinates, acres treated, and the surface waters or karst features into which the stormwater management facility will discharge;
- 2. Number and type of enforcement actions during the fiscal year; and
- 3. Number of exceptions granted during the fiscal year.

10.2 Recordkeeping

Campbell County shall keep records in accordance with the following:

- 1. Project records, including approved stormwater management plans, shall be kept for three (3) years after state permit termination or project completion.
- 2. Stormwater management facility inspection records shall be documented and retained for at least five (5) years from the date of inspection.
- 3. Construction record drawings shall be maintained in perpetuity or until a stormwater management facility is removed.
- 4. All registration statements submitted in accordance with 9VAC25-870-59 shall be documented and retained for at least three (3) years from the date of project completion or state permit termination.

11.0 Enforcement Guidance

Portions of the following are an adaptation of the Stormwater Management Enforcement Manual prepared by the Virginia Soil and Water Conservation Board and the Virginia Department of Conservation and Recreation (DCR) dated February 2006.

http://www.deq.state.va.us/Portals/0/DEQ/Water/Guidance/ChesBayPreservAct/StormwaterEnforcementManual.pdf

11.1 Introduction

Campbell County recognizes that its goal of effective enforcement may be accomplished in most cases through informal means by offering compliance assistance to the regulated community and ensuring that any noncompliance is corrected quickly. Nonetheless, Campbell County will use the full range of its enforcement authority as needed to deter violations and ensure that its mission to conserve and protect the environment and the health and well-being of the Commonwealth's citizens is fulfilled.

11.2 Authority

Campbell County is authorized by the Code of Virginia § 62.1-44.15:27 to establish and enforce the Virginia Stormwater Management Program (VSMP).

11.3 Violations

Campbell County may consider violations to include, but are not limited to:

- 1. No state permit registration;
- 2. No SWPPP;
- 3. Incomplete SWPPP;
- 4. SWPPP not available for review;
- 5. No approved erosion and sediment control plan;
- 6. Failure to install stormwater BMPs or erosion and sediment controls;
- 7. Stormwater BMPs or erosion and sediment controls improperly installed or maintained;
- 8. Operational deficiencies;
- 9. Failure to conduct required inspections; and/or
- 10. Incomplete, improper, or missed inspections.

11.4 Process

If a violation(s) is noted by the inspector, Campbell County may follow the subsequent general steps to enforce compliance of the regulations by issuing:

- 1. Verbal warning and inspection report;
- 2. Notice of Corrective Action;
- 3. Stop work order;
- 4. Emergency special orders;
- 5. An injunction; and

6. Civil penalty(ies).

11.5 Verbal Warning/Inspection Report

Under circumstances where an inspection reveals routine noncompliance that can be corrected within a reasonably short time, the Campbell County's Administrator may choose to issue a verbal warning accompanied by an inspection report that describes the specific problems and includes a schedule for correcting the noncompliance. A copy of the VSMP Permit & SWPPP Construction Inspection Report is found in Appendix N.

The purpose of the verbal warning is to give the regulated party responsible for the alleged noncompliance an opportunity to comply voluntarily and thus avoid sanctions that might be imposed by an escalated enforcement response.

11.6 Notice of Corrective Action

In accordance with § 62.1-44.15:37 of the Code of Virginia, when the Campbell County Administrator's initial attempts to secure a voluntary return to compliance are unsuccessful, the Administrator or Department may issue a Notice of Corrective Action (NOCA). Examples of situations where issuance of a NOCA is appropriate include the following:

- 1. When the regulated party has failed to correct the noncompliance at the site pursuant to a prior Verbal Warning;
- 2. Where inspections of a construction site indicate a continuing pattern of various routine noncompliance after Campbell County has issued one or more Verbal Warnings for specific noncompliance; and/or
- 3. Noncompliance at a construction site is causing an adverse impact to human health or the environment such as a discharge of sediment to a stream or wetland. This situation does not necessarily require prior issuance of a Verbal Warning.

The purpose of a NOCA is to inform the regulated party responsible for the alleged noncompliance of the facts surrounding the allegations, the applicable law, and the potential consequences for failing to address the situation, should the allegations prove true. The NOCA also gives the regulated party an opportunity to refute the allegations or to address the discrepancies described in the NOCA within a specified time.

It is important that field staff gathers sufficient evidence throughout the informal enforcement process to support escalating the enforcement response, should the need arise. For this reason, field staff should carefully document all of the steps of the informal process in inspection reports, photographs, telephones logs, and field notes.

NOCA Process

1. Except for special circumstances (e.g., ongoing adverse impacts to human health or the environment), past noncompliance should be documented in one or more

- Verbal Warning and VSMP Permit & SWPPP Construction Inspection Report issued pursuant to the guidelines in this Manual.
- 2. Explain to the responsible party in easily understood terms (i) any noncompliance identified during the site inspection or investigation and (ii) describe specific measures needed to achieve compliance. Also explain any (i) documented history of noncompliance at the site, (ii) your decision to issue NOCA, (iii) the reasons for that decision, and (iv) the potential consequences, should the responsible party fail to complete the measures specified in the NOCA within the allotted time (i.e., may result in escalation to formal enforcement, such as a Stop Work Order and potentially a civil charge).
- 3. Complete the VSMP Permit & SWPPP Construction Inspection Report.
- 4. Draft the NOCA; refer to Appendix R Example Notice of Corrective Action letter.
- 5. Deliver the approved NOCA by hand or send it by certified mail.
- 6. Conduct a follow- up inspection to ensure compliance.
- 7. Under circumstances where the responsible party has not corrected the problem or where significant new noncompliance is identified and if the responsible party has good reason for needing a short extension to complete the agreed upon measures or if the new noncompliance is minor and can be corrected immediately, issue a second NOCA.
- 8. If professional judgment dictates that issuing a second NOCA is not appropriate, initiate a Stop Work Order by discussing the facts of case with the Administrator.

11.7 Stop Work Order

In accordance with § 62.1-44.15:37 of the Code of Virginia, if a Permittee fails to comply with the verbal warnings, inspection reports recommended corrective actions, and/or NOCA, Campbell County or Department may issue an order requiring the owner, Permittee, person responsible for carrying out an approved plan, or person conducting the land-disturbing activities without an approved plan or required permit to cease all land-disturbing activities until the violation of the permit has ceased, or an approved plan and required permits are obtained, and specified corrective measures have been completed.

The stop work order shall become effective upon service on the person by mailing, with confirmation of delivery, sent to his address specified in the land records of the locality, or by personal delivery by an agent of the VSMP Authority or Department.

11.8 Emergency Special Orders

In accordance with § 62.1-44.15:25 and § 62.1-44.15:37 of the Code of Virginia, if Campbell County or the Department finds that any such violation is grossly affecting or presents an imminent and substantial danger to (i) the public health, safety, or welfare or the health of animals, fish, or aquatic life; (ii) a public water supply; or (iii) recreational, commercial, industrial, agricultural, or other reasonable uses, it may issue, without advance notice or hearing, an emergency order directing such person to cease immediately all land-disturbing activities on the site and shall provide an opportunity for a

hearing, after reasonable notice as to the time and place thereof, to such person, to affirm, modify, amend, or cancel such emergency order.

11.9 Injunction

In accordance with § 62.1-44.15:37 and § 62.1-44.15:42 of the Code of Virginia, if a person who has been issued an order is not complying with the terms thereof, Campbell County, Department, and/or the Board many institute a proceeding in the Circuit Court of Campbell County.

11.10 Civil Penalties

In accordance with § 62.1-44.15:42 and § 62.1-44.15:48 of the Code of Virginia, any person who violates any provision of the Code of Virginia or of any regulation, ordinance, or standard and specification adopted or approved hereunder or who fails, neglects, or refuses to comply with any order of Campbell County, the Department, the Board, or a court, issued as herein provided, shall be subject to a civil penalty not to exceed \$32,500 for each violation within the discretion of the court. Each day of violation of each requirement shall constitute a separate offense.

11.11 Payment of Civil Penalties

Pursuant to § 62.1-44.15:48 A of the Code of Virginia, civil penalties recovered by a locality's VSMP Authority shall be paid into the Campbell County's Treasury in which the violation occurred and are to be used for the purpose of minimizing, preventing, managing, or mitigating pollution of the waters of the locality and abating environmental pollution therein in such manner as the court may, by order, direct.

APPENDIX A

Virginia Stormwater Management Act (§62.1-44.15:24 et seq)

APPENDIX B

Virginia Stormwater Management Program Regulations (9VAC25-870)

APPENDIX C

Campbell County Stormwater Ordinance

APPENDIX D

VSMP Project Process Plan

		Applicant's Responsibilities	Authority's Responsibilities	Notes:		
S		on for Local VSMP Permit & General	Permit for Discharges of Stormwat			
	Registration Statement (General Permit)					
A		Complete the registration statement for the General Permit and provide to Campbell County with initial VSMP permit application package - refer to step 1C below.	Confirm the registration statement for the General Permit is complete and accurate, and enter the information into the DEQ system prior to issuance of the Completeness Review Form.			
В	VSMP Fee Payment	Provide 50% payment for the Department and Local Authority portion of the General Permit fee commensurate with the construction activity / land clearing proposed to Campbell County.	Confirm the VSMP fee provided is commensurate with the construction acitivty / land clearing proposed. Provide applicant with receipt acknowledging payment of the VSMP Fee.	The VSMP fee schedule is provided in the Stormwater Management Ordinance.		
С	VSMP Permit	Submit required documentation and application checklist at the initial submittal including certification by a Licensed Professional. Required documentation includes the following:	Release Completeness Review Form after confirmation that the checklist is completed and certified. Forward via email and/or USPS Mail the completeness review form to the Applicant and Owner within 15 calendar days of the initial submittal of all required documents.	The Completeness Review Form (Appendix H) is not an approval letter for the information submitted; rather an acknowledgement that all required documents were provided for review.		
		 Complete General Permit Registration Statement and payment of VSMP Permit Fee Certified and completed ESC & SWM Application Form and Checklist (Appendix G) ESC Plans, Details, Notes, etc. SWM Design Documents (Plans, Profiles, Details, Notes, etc.) 		Applicant is responsible for all other permits including any local land disturbance permits, erosion & sediment control approval, and other applicable permits.		
		 SWPPP including ESC Report, Pollution Prevention Plan, and SWM narrative and calculations (Refer to Appendix I for template.) BMP Maintenance Agreement (may be submitted at a later date but prior to plan approval) ESC & SWM Bond Estimate (may be submitted at a later date but prior to permit approval) Other Local Requirements 				
D	Incomplete Submittal	If the Authority provides notification of an incomplete submission, the Applicant will be required to submit the required information.	When the required information is submitted to the Authority, the Authority will then have 15 calendar days from the date of resubmission to provide the completeness review.			

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		Applicant's Responsibilities	Authority's Responsibilities	Notes:		
	Step 2: Local Review and Approval					
A	Review		Review plans to ensure accordance with local and state Stormwater Requirements and approve or provide written comments explaining disapproval (within 60 calendar days from initial submittal).	The Authority will commence review of the application following submittal of all required information by the Applicant. If the submittal is deficient, the review timeframe will not begin until all required information is submitted by the Applicant.		
В	Subsequent Reviews	If initial plan submittal is disapproved, address reviewer comments and re-submit with a letter including reviewer comments and responses.	Review and approve submittal or provide additional comments on submitted plan (within 45 calendar days from applicant re-submittal)	The Authority may require an additional fee for review of additional submittals exceeding three (3) reviews by the Authority prior to issuance of the final approval letter. This fee will be assessed as per the hourly rate of the reviewing agency to a maximum of \$1,000.		
С	Long Term Stormwater Facility Maintenance Agreement	Complete the maintenance agreement and submit to the Authority for review prior to plan approval and issuance of the VSMP permit. The Applicant must revise and resubmit the maintenance agreement, as requested in writing by the Authority.	Review and approve the maintenance agreement prior to plan approval and issuance of the VSMP permit and prior to confirming plan approval with DEQ for the registration statement for the General Permit. If the maintenance agreement is found to be incomplete and/or deficient, provide notification in writing to the Applicant outlining the deficiencies.	A long-term stormwater facility maintenance agreement may not be applicable for individual projects included as part of a common plan of development with a separate long-term stormwater facility maintenance agreement. A Long-Term Stormwater Facility Maintenance Agreement is provided in Appendix K.		
D	ESC & SWM Bonds	Complete and submit the bond estimate to the Authority for review prior to issuance of the VSMP permit. The Applicant must revise and resubmit the bond estimate, as requested in writing by the Authority.	Review and approve the bond estimate prior to issuance of the VSMP permit. Confirm all ESC and SWM items are covered in the bond. If the bond estimate is found to be incomplete, provide notification in writing to the Applicant outlining the deficiencies in the bond estimate.	An Erosion and Sediment Control and Stormwater Management Facility (BMP) Bond Calculator is provided in Appendix M.		
E	Approval & Issuance of VSMP Permit	1) Provide the final 50% payment via check to the Authority for the VSMP permit fee designated amount commensurate with the construction activity / land clearing proposed. 2) Provide a copy of the permit to the contractor to include in the SWPPP.	Upon approval of the elements required for the project's SWPPP, issue a local VSMP permit to the Owner, copy the Applicant, and confirm the plans are approved with DEQ for completion and issuance of the registration statement for the General Permit.			

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VSMP Project Process Plan

		Applicant's Responsibilities	Authority's Responsibilities	Notes:			
	Step 3: Construction Inspections						
Α	Inspections	Provide access to the Authority for inspection of the construction site.	Complete inspections of the land-disturbing activity during construction for compliance with the approved stormwater plan, including implementation of any additional control measures necessary to address a local TMDL. The Construction Inspection Form shall be completed and provided to the Applicant noting any deficiencies and schedule to complete modifications for compliance.	A VSMP & SWPPP Construction Inspection Form is provided in Appendix N. Complete an inspection within 24 hours of a major rainfall event.			
В	SWPPP Updates	Update the SWPPP as required during construction (refer to 9VAC25-880-70 - the VSMP General Permit for Discharges of Stormwater from Construction Activities.	Confirm SWPPP is updated as part of inspection.				
С	Enforcement		If violations noted in inspection reports are not corrected, follow the enforcement process as established in Section 11.0 of the Administrative Guidance Manual.				

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		Applicant's Responsibilities	Authority's Responsibilities	Notes:		
	Step 4: Construction Closeout Documentation					
A	SWM Facility Construction Record Report	Complete a construction record drawing for all permanent stormwater management facilities constructed as part of the project. The record drawing must include all the information listed in the Construction Record Drawing Checklist for Permanent Stormwater Management Facilities.	Review construction record drawings for all permanent stormwater management facilities constructed as part of the project for compliance with the Construction Record Drawing Checklist for Permanent Stormwater Management Facilities.	The Construction Record Drawing Checklist for Permanent Stormwater Management Facilities is provided in Appendix O.		
В	Project Completion Form	permanent stormwater	Complete a final inspection to confirm the site meets the requirements of the Project Completion Form. If the site is deemed to meet the requirements of the Project Completion Form, sign the form and return to the Applicant.	A Project Completion Form Template is provided in Appendix P.		
С		Complete the Project Completion Form and submit to the Authority for review and approval. The Applicant must have an approved construction record drawing for all permanent stormwater management facilities constructed as part of the project.	Once the site meets the requirements of the Project Completion form and the construction record drawing for permanent stormwater management facilities has been approved, the Authority can release the Erosion and Sediment Control and Stormwater Management Bonds / Letters of Credit and initiate permit termination.			
		Step 5: Post	-Construction Inspections			
A	Provide inspections and reports for all stormwater management BMPs within classification 2, 3, and 4, as required by the long-term stormwater facility maintenance agreement, to the Authority at the frequency noted in Table 9.1 in the Administrative Guidance Manual.	management facilities (BMPs) have a long-term stormwater facility maintenance agreement. Send reminders to the Owner to complete an inspection and provide a report, as per the				
		The state of the s	frequency noted in Table 9.1 in the Administrative Guidance Manual. Complete inspections and reports every 5 years for all facilities that are in BMP classification 1 (refer to Table 9.1 in the Administrative Guidance Manual).	Refer to Appendix Q for Post- Construction Inspection forms.		

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APPENDIX E

General Permit for Discharges of Stormwater from Construction Activities

CHAPTER 880

GENERAL VPDES PERMIT FOR DISCHARGES OF STORMWATER FROM CONSTRUCTION ACTIVITIES

9VAC25-880-1. Definitions.

The words and terms used in this chapter shall have the meanings defined in the Virginia Stormwater Management Act (Article 2.3 (§ 62.1-44.15:24 et seq.) of Chapter 3.1 of Title 62.1 of the Code of Virginia), this chapter, and 9VAC25-870 unless the context clearly indicates otherwise, except as otherwise specified in this section. Terms not defined in the Act, this chapter, or 9VAC25-870 shall have the meaning attributed to them in the federal Clean Water Act (33 USC § 1251 et seq.) (CWA). For the purposes of this chapter:

"Business day" means Monday through Friday excluding state holidays.

"Commencement of land disturbance" means the initial disturbance of soils associated with clearing, grading, or excavating activities or other construction activities (e.g., stockpiling of fill material).

"Construction site" means the land where any land-disturbing activity is physically located or conducted, including any adjacent land used or preserved in connection with the land-disturbing activity.

"Final stabilization" means that one of the following situations has occurred:

- 1. All soil disturbing activities at the site have been completed and a permanent vegetative cover has been established on denuded areas not otherwise permanently stabilized. Permanent vegetation shall not be considered established until a ground cover is achieved that is uniform (e.g., evenly distributed), mature enough to survive, and will inhibit erosion.
- 2. For individual lots in residential construction, final stabilization can occur by either:
 - a. The homebuilder completing final stabilization as specified in subdivision 1 of this definition; or
 - b. The homebuilder establishing temporary soil stabilization, including perimeter controls for an individual lot prior to occupation of the home by the homeowner, and informing the homeowner of the need for, and benefits of, final stabilization.
- 3. For construction projects on land used for agricultural purposes, final stabilization may be accomplished by returning the disturbed land to its preconstruction agricultural use. Areas disturbed that were not previously used for agricultural activities, such as buffer strips immediately adjacent to surface waters, and areas that are not being returned to their preconstruction agricultural use must meet the final stabilization criteria specified in subdivision 1 or 2 of this definition.

"Immediately" means as soon as practicable, but no later than the end of the next business day, following the day when the land-disturbing activities have temporarily or permanently ceased. In the context of this general permit, "immediately" is used to define the deadline for initiating stabilization measures.

"Impaired waters" means surface waters identified as impaired on the 2012 § 305(b)/303(d) Water Quality Assessment Integrated Report.

"Infeasible" means not technologically possible or not economically practicable and achievable in light of best industry practices.

"Initiation of stabilization activities" means:

1. Prepping the soil for vegetative or nonvegetative stabilization;

- 2. Applying mulch or other nonvegetative product to the exposed area;
- 3. Seeding or planting the exposed area;
- 4. Starting any of the above activities on a portion of the area to be stabilized, but not on the entire area; or
- 5. Finalizing arrangements to have the stabilization product fully installed in compliance with the applicable deadline for completing stabilization.

This list is not exhaustive.

"Measurable storm event" means a rainfall event producing 0.25 inches of rain or greater over 24 hours.

"Stabilized" means land that has been treated to withstand normal exposure to natural forces without incurring erosion damage.

9VAC25-880-10. Purpose.

This general permit regulation governs stormwater discharges from regulated construction activities. For the purposes of this chapter, these discharges are defined as stormwater discharges associated with large construction activity, and stormwater discharges associated with small construction activity. Stormwater discharges associated with other types of industrial activity shall not have coverage under this general permit. This general permit covers only discharges through a point source to surface waters or through a municipal or nonmunicipal separate storm sewer system to surface waters. Stormwater discharges associated with industrial activity that originate from construction activities that have been completed and the site has undergone final stabilization are not authorized by this general permit.

9VAC25-880-15. Applicability of incorporated references based on the dates that they became effective.

Except as noted, when a regulation of the United States set forth in the Code of Federal Regulations is referenced and incorporated herein, that regulation shall be as it exists and has been published in the July 1, 2013, update.

9VAC25-880-20. Effective date of general permit.

This general permit is effective on July 1, 2014. The general permit will expire on June 30, 2019. This general permit is effective for any covered operator upon compliance with all provisions of 9VAC25-880-30.

9VAC25-880-30. Authorization to discharge.

A. Any operator governed by this general permit is authorized to discharge to surface waters of the Commonwealth of Virginia provided that:

- 1. The operator submits a complete and accurate registration statement, if required to do so, in accordance with 9VAC25-880-50 and receives acceptance of the registration by the board:
- 2. The operator submits any permit fees, if required to do so, in accordance with 9VAC25-870-700 et seq.;
- 3. The operator complies with the applicable requirements of 9VAC25-880-70;
- 4. The operator obtains approval of:

- a. An erosion and sediment control plan from the appropriate VESCP authority as authorized under the Erosion and Sediment Control Regulations (9VAC25-840), unless the operator receives from the VESCP an "agreement in lieu of a plan" as defined in 9VAC25-840-10 or prepares the erosion and sediment control plan in accordance with annual standards and specifications approved by the department. The operator of any land-disturbing activity that is not required to obtain erosion and sediment control plan approval from a VESCP authority or is not required to adopt department-approved annual standards and specifications shall submit the erosion and sediment control plan to the department for review and approval; and
- b. A stormwater management plan from the appropriate VSMP authority as authorized under the Virginia Stormwater Management Program (VSMP) Regulation (9VAC25-870), unless the operator prepares the stormwater management plan in accordance with annual standards and specifications approved by the department. The operator of any land-disturbing activity that is not required to obtain stormwater management plan approval from a VSMP authority or is not required to adopt department-approved annual standards and specifications shall submit the stormwater management plan to the department for review and approval; and
- 5. The board has not notified the operator that the discharge is not eligible for coverage in accordance with subsection B of this section.
- B. The board will notify an operator that the discharge is not eligible for coverage under this general permit in the event of any of the following:
 - 1. The operator is required to obtain an individual permit in accordance with 9VAC25-870-410 B;
 - 2. The operator is proposing discharges to surface waters specifically named in other board regulations that prohibit such discharges;
 - 3. The discharge causes, may reasonably be expected to cause, or contributes to a violation of water quality standards (9VAC25-260);
 - 4. The discharge violates or would violate the antidegradation policy in the Water Quality Standards (9VAC25-260-30); or
 - 5. The discharge is not consistent with the assumptions and requirements of an applicable TMDL approved prior to the term of this general permit.
- C. This general permit also authorizes stormwater discharges from support activities (e.g., concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, borrow areas) located on-site or off-site provided that:
 - 1. The support activity is directly related to a construction activity that is required to have general permit coverage for discharges of stormwater from construction activities;
 - 2. The support activity is not a commercial operation, nor does it serve multiple unrelated construction activities by different operators;
 - 3. The support activity does not operate beyond the completion of the last construction activity it supports:
 - 4. The support activity is identified in the registration statement at the time of general permit coverage;
 - 5. Appropriate control measures are identified in a stormwater pollution prevention plan and implemented to address the discharges from the support activity areas; and
 - 6. All applicable, state, federal, and local approvals are obtained for the support activity.
- D. Support activities located off-site are not required to be covered under this general permit. Discharges of stormwater from off-site support activities may be authorized under

another state or VPDES permit. Where stormwater discharges from off-site support activities are not authorized under this general permit, the land area of the off-site support activity need not be included in determining the total land disturbance acreage of the construction activity seeking general permit coverage.

- E. Discharges authorized by this general permit may be commingled with other sources of stormwater that are not required to be covered under a state permit, so long as the commingled discharge is in compliance with this general permit. Discharges authorized by a separate state or VPDES permit may be commingled with discharges authorized by this general permit so long as all such discharges comply with all applicable state and VPDES permit requirements.
- F. Authorized nonstormwater discharges. The following nonstormwater discharges from construction activities are authorized by this general permit:
 - 1. Discharges from firefighting activities;
 - 2. Fire hydrant flushings;
 - 3. Water used to wash vehicles or equipment where soaps, solvents, or detergents have not been used and the wash water has been filtered, settled, or similarly treated prior to discharge;
 - 4. Water used to control dust that has been filtered, settled, or similarly treated prior to discharge;
 - 5. Potable water source, including uncontaminated waterline flushings;
 - 6. Routine external building wash down where soaps, solvents, or detergents have not been used and the wash water has been filtered, settled, or similarly treated prior to discharge;
 - 7. Pavement wash water where spills or leaks of toxic or hazardous materials have not occurred (or where all spilled or leaked material has been removed prior to washing); where soaps, solvents, or detergents have not been used; and where the wash water has been filtered, settled, or similarly treated prior to discharge;
 - 8. Uncontaminated air conditioning or compressor condensate;
 - 9. Uncontaminated groundwater or spring water;
 - 10. Foundation or footing drains where flows are not contaminated with process materials such as solvents:
 - 11. Uncontaminated, excavation dewatering, including dewatering of trenches and excavations that have been filtered, settled, or similarly treated prior to discharge; and
 - 12. Landscape irrigations.
- G. Approval for coverage under this general permit does not relieve any operator of the responsibility to comply with any other applicable federal, state or local statute, ordinance or regulation.
 - H. Continuation of general permit coverage.
 - 1. Any operator that was authorized to discharge under the general permit issued in 2009 and that submits a complete and accurate registration statement on or before June 30, 2014, is authorized to continue to discharge under the terms of the 2009 general permit until such time as the board either:
 - a. Issues coverage to the operator under this general permit or
 - b. Notifies the operator that the discharge is not eligible for coverage under this general permit.
 - 2. When the operator is not in compliance with the conditions of the expiring or expired general permit the board may choose to do any or all of the following:

- a. Initiate enforcement action based upon the 2009 general permit;
- b. Issue a notice of intent to deny the new general permit. If the general permit is denied, the owner or operator would then be required to cease the activities authorized by the continued general permit or be subject to enforcement action for operating without a state permit;
- c. Issue a new state permit with appropriate conditions; or
- d. Take other actions authorized by the VSMP Regulation (9VAC25-870).

9VAC25-880-40. Delegation of authorities to state and local programs.

A board-approved VSMP authority is authorized to administer requirements of this general permit, including but not limited to: (i) registration statement acceptance; (ii) fee collection; (iii) stormwater management plan review and approval; and (iv) permit compliance and enforcement dependent upon conditions established as part of the board approval.

9VAC25-880-50. General permit application (registration statement).

A. Deadlines for submitting registration statement. Any operator seeking coverage under this general permit, and that is required to submit a registration statement, shall submit a complete and accurate general VPDES permit registration statement in accordance with this section, which shall serve as a notice of intent for coverage under the general VPDES permit for discharges of stormwater from construction activities.

- 1. New construction activities.
 - a. Any operator proposing a new stormwater discharge from construction activities shall submit a complete and accurate registration statement to the VSMP authority prior to the commencement of land disturbance.
 - b. Any operator proposing a new stormwater discharge from construction activities in response to a public emergency where the related work requires immediate authorization to avoid imminent endangerment to human health or the environment is authorized to discharge under this general permit, provided that:
 - (1) The operator submits a complete and accurate registration statement to the VSMP authority no later than 30 days after commencing land disturbance; and
 - (2) Documentation to substantiate the occurrence of the public emergency is provided with the registration statement.
 - c. Any operator proposing a new stormwater discharge associated with the construction of a single-family residence separately built, disturbing less than one acre and part of a larger common plan of development or sale, is authorized to discharge under this general permit and is not required to submit a registration statement or the department portion of the permit fee, provided that the stormwater management plan for the larger common plan of development or sale provides permanent control measures (i.e., stormwater management facilities) encompassing the single family residence.
- 2. Existing construction activities.
 - a. Any operator that was authorized to discharge under the general permit issued in 2009 and that intends to continue coverage under this general permit shall:
 - (1) Submit a complete and accurate registration statement to the VSMP authority on or before June 1, 2014; and

- (2) Update its stormwater pollution prevention plan to comply with the requirements of this general permit no later than 60 days after the date of coverage under this general permit.
- b. Any operator with an existing stormwater discharge associated with the construction of a single-family residence separately built, disturbing less than one acre and part of a larger common plan of development or sale, and that intends to continue coverage under this general permit, is authorized to discharge under this general permit and is not required to submit a registration statement or the department portion of the permit fee, provided that:
- (1) The stormwater management plan for the larger common plan of development or sale provides permanent control measures (i.e., stormwater management facilities) encompassing the single-family residence; and
- (2) The operator updates its stormwater pollution prevention plan to comply with the requirements of this general permit no later than 60 days after the date of coverage under this general permit.
- 3. For stormwater discharges from construction activities where the operator changes, the new operator must submit a complete and accurate registration statement or transfer agreement form to the VSMP authority prior to assuming operational control over site specifications or commencing work on-site.
- 4. Late notifications. Operators are not prohibited from submitting registration statements after commencing land disturbance. When a late registration statement is submitted, authorization for discharges shall not occur until coverage under the general permit is issued. The VSMP authority, department, board, and the EPA reserve the right to take enforcement action for any unpermitted discharges that occur between the commencement of land disturbance and discharge authorization.
- B. Registration statement. The operator shall submit a registration statement to the VSMP authority that shall contain the following information:
 - 1. Name, contact, mailing address, telephone number, and email address if available of the construction activity operator. No more than one operator may receive coverage under each registration statement.
 - NOTE: General permit coverage will be issued to this operator, and the certification in subdivision 11 of this subsection must be signed by the appropriate person associated with this operator;
 - 2. Name and location if available of the construction activity and all off-site support activities to be covered under this general permit, including city or county, and latitude and longitude in decimal degrees;
 - 3. Status of the construction activity: federal, state, public, or private;
 - 4. Nature of the construction activity (e.g., commercial, industrial, residential, agricultural, oil and gas, etc.);
 - 5. Name of the receiving water(s) and HUC;
 - 6. If the discharge is through a municipal separate storm sewer system (MS4), the name of the municipal separate storm sewer system operator;
 - 7. Estimated project start date and completion date;
 - 8. Total land area of development and estimated area to be disturbed by the construction activity (to the nearest one-hundredth of an acre);
 - 9. Whether the area to be disturbed by the construction activity is part of a larger common plan of development or sale;

- 10. A stormwater pollution prevention plan (SWPPP) must be prepared in accordance with the requirements of the General VPDES Permit for Stormwater Discharges from Construction Activities prior to submitting the registration statement. By signing the registration statement the operator certifies that the SWPPP has been prepared; and
- 11. The following certification: "I certify under penalty of law that I have read and understand this registration statement and that this document and all attachments were prepared in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations."
- C. The registration statement shall be signed in accordance with 9VAC25-880-70, Part III K.

9VAC25-880-60. Termination of general permit coverage.

- A. Requirements. The operator of the construction activity shall submit a notice of termination to the VSMP authority after one or more of the following conditions have been met:
 - 1. Necessary permanent control measures included in the SWPPP for the site are in place and functioning effectively and final stabilization has been achieved on all portions of the site for which the operator is responsible. When applicable, long-term responsibility and maintenance requirements for permanent control measures shall be recorded in the local land records prior to the submission of a notice of termination;
 - 2. Another operator has assumed control over all areas of the site that have not been finally stabilized and obtained coverage for the ongoing discharge;
 - 3. Coverage under an alternative VPDES or state permit has been obtained; or
 - 4. For residential construction only, temporary soil stabilization has been completed and the residence has been transferred to the homeowner.

The notice of termination should be submitted no later than 30 days after one of the above conditions being met. Authorization to discharge terminates at midnight on the date that the notice of termination is submitted for the conditions set forth in subdivisions 2 through 4 of this subsection unless otherwise notified by the VSMP authority or the department. Termination of authorizations to discharge for the conditions set forth in subdivision 1 of this subsection shall be effective upon notification from the department that the provisions of subdivision 1 of this subsection have been met or 60 days after submittal of the notice of terminations, whichever occurs first.

- B. Notice of termination. The notice of termination shall contain the following information:
 - 1. Name, contact, mailing address, telephone number, and email address if available of the construction activity operator.
 - 2. Name and location if available of the construction activity covered under this general permit, including city or county, and latitude and longitude in decimal degrees.
 - 3. The general permit registration number.
 - 4. The basis for submission of the notice of termination, pursuant to subsection A of this section.
 - 5. Where applicable, a list of the on-site and off-site permanent control measures (both structural and nonstructural) that were installed to comply with the stormwater

management technical criteria. For each permanent control measure that was installed, the following information shall be included:

- a. The type of permanent control measure installed and the date that it became functional as a permanent control measure;
- b. The location if available of the permanent control measure, including city or county, and latitude and longitude in decimal degrees;
- c. The receiving water of the permanent control measures; and
- d. The number of total and impervious acres treated by the permanent control measure (to the nearest one-tenth of an acre).
- 6. Where applicable, the following information related to participation in a regional stormwater management plan. For each regional stormwater management facility, the following information shall be included:
 - a. The type of regional facility to which the site contributes;
 - b. The location if available of the regional facility, including city or county, and latitude and longitude in decimal degrees; and
 - c. The number of total and impervious site acres treated by the regional facility (to the nearest one-tenth of an acre).
- 7. Where applicable, the following information related to perpetual nutrient credits that were acquired in accordance with § 62.1-44.15:35 of the Code of Virginia:
 - a. The name of the nonpoint nutrient credit generating entity from which perpetual nutrient credits were acquired; and
 - b. The number of perpetual nutrient credits acquired (lbs. per acre per year).
- 8. The following certification: "I certify under penalty of law that I have read and understand this notice of termination and that this document and all attachments were prepared in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations."
- C. The notice of termination shall be signed in accordance with 9VAC25-880-70 Part III K.
- D. Termination by the board. The board may terminate coverage under this general permit during its term and require application for an individual permit or deny a general permit renewal application on its own initiative in accordance with the Act, this chapter, and the VSMP Regulation, 9VAC25-870.

9VAC25-880-70. General permit.

Any operator whose registration statement is accepted by the board will receive the following general permit and shall comply with the requirements contained therein and be subject to all requirements of 9VAC25-870.

General Permit No.: VAR10 Effective Date: July 1, 2014 Expiration Date: June 30, 2019

GENERAL VPDES PERMIT FOR DISCHARGES OF STORMWATER FROM CONSTRUCTION ACTIVITIES

AUTHORIZATION TO DISCHARGE UNDER THE VIRGINIA STORMWATER MANAGEMENT PROGRAM AND THE VIRGINIA STORMWATER MANAGEMENT ACT

In compliance with the provisions of the Clean Water Act, as amended, and pursuant to the Virginia Stormwater Management Act and regulations adopted pursuant thereto, operators of construction activities are authorized to discharge to surface waters within the boundaries of the Commonwealth of Virginia, except those specifically named in State Water Control Board regulations that prohibit such discharges.

The authorized discharge shall be in accordance with this cover page, Part I - Discharge Authorization and Special Conditions, Part II - Stormwater Pollution Prevention Plan, and Part III - Conditions Applicable to All VPDES Permits as set forth herein.

PART I DISCHARGE AUTHORIZATION AND SPECIAL CONDITIONS

A. Coverage under this general permit.

- 1. During the period beginning with the date of coverage under this general permit and lasting until the general permit's expiration date, the operator is authorized to discharge stormwater from construction activities.
- 2. This general permit also authorizes stormwater discharges from support activities (e.g., concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, borrow areas) located on-site or off-site provided that:
 - a. The support activity is directly related to the construction activity that is required to have general permit coverage for discharges of stormwater from construction activities:
 - b. The support activity is not a commercial operation, nor does it serve multiple unrelated construction activities by different operators;
 - c. The support activity does not operate beyond the completion of the last construction activity it supports;
 - d. The support activity is identified in the registration statement at the time of general permit coverage;
 - e. Appropriate control measures are identified in a stormwater pollution prevention plan and implemented to address the discharges from the support activity areas; and
 - f. All applicable state, federal, and local approvals are obtained for the support activity.

B. Limitations on coverage.

1. Post-construction discharges. This general permit does not authorize stormwater discharges that originate from the site after construction activities have been completed and the site, including any support activity sites covered under the general permit

registration, has undergone final stabilization. Post-construction industrial stormwater discharges may need to be covered by a separate VPDES permit.

- 2. Discharges mixed with nonstormwater. This general permit does not authorize discharges that are mixed with sources of nonstormwater, other than those discharges that are identified in Part I E (Authorized nonstormwater discharges) and are in compliance with this general permit.
- 3. Discharges covered by another state permit. This general permit does not authorize discharges of stormwater from construction activities that have been covered under an individual permit or required to obtain coverage under an alternative general permit.
- 4. Impaired waters and TMDL limitation. Discharges of stormwater from construction activities to surface waters identified as impaired in the 2012 § 305(b)/303(d) Water Quality Assessment Integrated Report or for which a TMDL wasteload allocation has been established and approved prior to the term of this general permit for (i) sediment or a sediment-related parameter (i.e., total suspended solids or turbidity) or (ii) nutrients (i.e., nitrogen or phosphorus) are not eligible for coverage under this general permit unless the operator develops, implements, and maintains a SWPPP that minimizes the pollutants of concern and, when applicable, is consistent with the assumptions and requirements of the approved TMDL wasteload allocations. In addition, the operator shall implement the following items:
 - a. The impaired water(s), approved TMDL(s), and pollutant(s) of concern, when applicable, shall be identified in the SWPPP;
 - b. Permanent or temporary soil stabilization shall be applied to denuded areas within seven days after final grade is reached on any portion of the site;
 - c. Nutrients shall be applied in accordance with manufacturer's recommendations or an approved nutrient management plan and shall not be applied during rainfall events; and
 - d. The applicable SWPPP inspection requirements specified in Part II F 2 shall be amended as follows:
 - (1) Inspections shall be conducted at a frequency of (i) at least once every four business days or (ii) at least once every five business days and no later than 48 hours following a measurable storm event. In the event that a measurable storm event occurs when there are more than 48 hours between business days, the inspection shall be conducted on the next business day; and
 - (2) Representative inspections used by utility line installation, pipeline construction, or other similar linear construction activities shall inspect all outfalls discharging to surface waters identified as impaired or for which a TMDL wasteload allocation has been established and approved prior to the term of this general permit.
- 5. Exceptional waters limitation. Discharges of stormwater from construction activities not previously covered under the general permit issued in 2009 to exceptional waters identified in 9VAC25-260-30 A 3 c are not eligible for coverage under this general permit unless the operator implements the following:
 - a. The exceptional water(s) shall be identified in the SWPPP;
 - b. Permanent or temporary soil stabilization shall be applied to denuded areas within seven days after final grade is reached on any portion of the site;
 - c. Nutrients shall be applied in accordance with manufacturer's recommendations or an approved nutrient management plan and shall not be applied during rainfall events; and

- d. The applicable SWPPP inspection requirements specified in Part II F 2 shall be amended as follows:
- (1) Inspections shall be conducted at a frequency of (i) at least once every four business days or (ii) at least once every five business days and no later than 48 hours following a measurable storm event. In the event that a measurable storm event occurs when there are more than 48 hours between business days, the inspection shall be conducted on the next business day; and
- (2) Representative inspections used by utility line installation, pipeline construction, or other similar linear construction activities shall inspect all outfalls discharging to exceptional waters.
- 6. There shall be no discharge of floating solids or visible foam in other than trace amounts.
- C. Commingled discharges. Discharges authorized by this general permit may be commingled with other sources of stormwater that are not required to be covered under a state permit, so long as the commingled discharge is in compliance with this general permit. Discharges authorized by a separate state or VPDES permit may be commingled with discharges authorized by this general permit so long as all such discharges comply with all applicable state and VPDES permit requirements.
- D. Prohibition of nonstormwater discharges. Except as provided in Parts I A 2, I C and I E, all discharges covered by this general permit shall be composed entirely of stormwater associated with construction activities. All other discharges including the following are prohibited:
 - 1. Wastewater from washout of concrete;
 - 2. Wastewater from the washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials;
 - 3. Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance:
 - 4. Oils, toxic substances, or hazardous substances from spills or other releases; and
 - 5. Soaps, solvents, or detergents used in equipment and vehicle washing.
- E. Authorized nonstormwater discharges. The following nonstormwater discharges from construction activities are authorized by this general permit when discharged in compliance with this general permit:
 - 1. Discharges from firefighting activities;
 - 2. Fire hydrant flushings;
 - 3. Waters used to wash vehicles or equipment where soaps, solvents, or detergents have not been used and the wash water has been filtered, settled, or similarly treated prior to discharge;
 - 4. Water used to control dust that has been filtered, settled, or similarly treated prior to discharge;
 - 5. Potable water sources, including uncontaminated waterline flushings;
 - 6. Routine external building wash down where soaps, solvents or detergents have not been used and the wash water has been filtered, settled, or similarly treated prior to discharge;
 - 7. Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (or where all spilled or leaked material has been removed prior to

washing); where soaps, solvents, or detergents have not been used; and where the wash water has been filtered, settled, or similarly treated prior to discharge;

- 8. Uncontaminated air conditioning or compressor condensate;
- 9. Uncontaminated ground water or spring water;
- 10. Foundation or footing drains where flows are not contaminated with process materials such as solvents;
- 11. Uncontaminated excavation dewatering, including dewatering of trenches and excavations that have been filtered, settled, or similarly treated prior to discharge; and
- 12. Landscape irrigation.

F. Termination of general permit coverage.

- 1. The operator of the construction activity shall submit a notice of termination in accordance with 9VAC25-880-60 to the VSMP authority after one or more of the following conditions have been met:
 - a. Necessary permanent control measures included in the SWPPP for the site are in place and functioning effectively and final stabilization has been achieved on all portions of the site for which the operator is responsible. When applicable, long term responsibility and maintenance requirements shall be recorded in the local land records prior to the submission of a notice of termination;
 - b. Another operator has assumed control over all areas of the site that have not been finally stabilized and obtained coverage for the ongoing discharge;
 - c. Coverage under an alternative VPDES or state permit has been obtained; or
 - d. For residential construction only, temporary soil stabilization has been completed and the residence has been transferred to the homeowner.
- 2. The notice of termination should be submitted no later than 30 days after one of the above conditions in subdivision 1 of this subsection are met. Authorization to discharge terminates at midnight on the date that the notice of termination is submitted for the conditions set forth in subdivisions 1 b through 1 d of this subsection. Termination of authorizations to discharge for the conditions set forth in subdivision 1 a of this subsection shall be effective upon notification from the department that the provisions of subdivision 1 a of this subsection have been met or 60 days after submittal of the notice of termination, whichever occurs first.
- 3. The notice of termination shall be signed in accordance with Part III K of this general permit.

G. Water quality protection.

- 1. The operator must select, install, implement and maintain control measures as identified in the SWPPP at the construction site that minimize pollutants in the discharge as necessary to ensure that the operator's discharge does not cause or contribute to an excursion above any applicable water quality standard.
- 2. If it is determined by the department that the operator's discharges are causing, have reasonable potential to cause, or are contributing to an excursion above any applicable water quality standard, the department, in consultation with the VSMP authority, may take appropriate enforcement action and require the operator to:
 - a. Modify or implement additional control measures in accordance with Part II B to adequately address the identified water quality concerns;

- b. Submit valid and verifiable data and information that are representative of ambient conditions and indicate that the receiving water is attaining water quality standards; or
- c. Submit an individual permit application in accordance with 9VAC25-870-410 B 3.

All written responses required under this chapter must include a signed certification consistent with Part III K.

PART II STORMWATER POLLUTION PREVENTION PLAN

A stormwater pollution prevention plan (SWPPP) shall be developed prior to the submission of a registration statement and implemented for the construction activity, including any support activity, covered by this general permit. SWPPPs shall be prepared in accordance with good engineering practices. Construction activities that are part of a larger common plan of development or sale and disturb less than one acre may utilize a SWPPP template provided by the department and need not provide a separate stormwater management plan if one has been prepared and implemented for the larger common plan of development or sale.

The SWPPP requirements of this general permit may be fulfilled by incorporating by reference other plans such as a spill prevention control and countermeasure (SPCC) plan developed for the site under § 311 of the federal Clean Water Act or best management practices (BMP) programs otherwise required for the facility provided that the incorporated plan meets or exceeds the SWPPP requirements of Part II A. All plans incorporated by reference into the SWPPP become enforceable under this general permit. If a plan incorporated by reference does not contain all of the required elements of the SWPPP, the operator must develop the missing elements and include them in the SWPPP.

Any operator that was authorized to discharge under the general permit issued in 2009, and that intends to continue coverage under this general permit, shall update its stormwater pollution prevention plan to comply with the requirements of this general permit no later than 60 days after the date of coverage under this general permit.

A. Stormwater pollution prevention plan contents. The SWPPP shall include the following items:

- 1. General information.
 - a. A signed copy of the registration statement for coverage under the general VPDES permit for discharges of stormwater from construction activities;
 - b. Upon receipt, a copy of the notice of coverage under the general VPDES permit for discharges of stormwater from construction activities (i.e., notice of coverage letter):
 - c. Upon receipt, a copy of the general VPDES permit for discharges of stormwater from construction activities:
 - d. A narrative description of the nature of the construction activity, including the function of the project (e.g., low density residential, shopping mall, highway, etc.);
 - e. A legible site plan identifying:
 - (1) Directions of stormwater flow and approximate slopes anticipated after major grading activities;
 - (2) Limits of land disturbance including steep slopes and natural buffers around surface waters that will not be disturbed;

- (3) Locations of major structural and nonstructural control measures, including sediment basins and traps, perimeter dikes, sediment barriers, and other measures intended to filter, settle, or similarly treat sediment, that will be installed between disturbed areas and the undisturbed vegetated areas in order to increase sediment removal and maximize stormwater infiltration;
- (4) Locations of surface waters;
- (5) Locations where concentrated stormwater is discharged;
- (6) Locations of support activities, when applicable and when required by the VSMP authority, including but not limited to (i) areas where equipment and vehicle washing, wheel wash water, and other wash water is to occur; (ii) storage areas for chemicals such as acids, fuels, fertilizers, and other lawn care chemicals; (iii) concrete wash out areas; (iv) vehicle fueling and maintenance areas; (v) sanitary waste facilities, including those temporarily placed on the construction site; and (vi) construction waste storage; and
- (7) When applicable, the location of the on-site rain gauge or the methodology established in consultation with the VSMP authority used to identify measurable storm events for inspection purposes.
- 2. Erosion and sediment control plan.
 - a. An erosion and sediment control plan approved by the VESCP authority as authorized under the Erosion and Sediment Control Regulations (9VAC25-840), an "agreement in lieu of a plan" as defined in 9VAC25-840-10 from the VESCP authority, or an erosion and sediment control plan prepared in accordance with annual standards and specifications approved by the department. Any operator proposing a new stormwater discharge from construction activities that is not required to obtain erosion and sediment control plan approval from a VESCP authority or does not adopt department-approved annual standards and specifications shall submit the erosion and sediment control plan to the department for review and approval.
 - b. All erosion and sediment control plans shall include a statement describing the maintenance responsibilities required for the erosion and sediment controls used.
 - c. A properly implemented approved erosion and sediment control plan, "agreement in lieu of a plan," or erosion and sediment control plan prepared in accordance with department-approved annual standards and specifications, that adequately:
 - (1) Controls the volume and velocity of stormwater runoff within the site to minimize soil erosion:
 - (2) Controls stormwater discharges, including peak flow rates and total stormwater volume, to minimize erosion at outlets and to minimize downstream channel and stream bank erosion:
 - (3) Minimizes the amount of soil exposed during the construction activity;
 - (4) Minimizes the disturbance of steep slopes;
 - (5) Minimizes sediment discharges from the site in a manner that addresses (i) the amount, frequency, intensity, and duration of precipitation; (ii) the nature of resulting stormwater runoff; and (iii) soil characteristics, including the range of soil particle sizes present on the site;
 - (6) Provides and maintains natural buffers around surface waters, directs stormwater to vegetated areas to increase sediment removal, and maximizes stormwater infiltration, unless infeasible;

- (7) Minimizes soil compaction and, unless infeasible, preserves topsoil;
- (8) Ensures that stabilization of disturbed areas will be initiated immediately whenever any clearing, grading, excavating, or other land-disturbing activities have permanently ceased on any portion of the site, or temporarily ceased on any portion of the site and will not resume for a period exceeding 14 days; and
- (9) Utilizes outlet structures that withdraw stormwater from the surface (i.e., above the permanent pool or wet storage water surface elevation), unless infeasible, when discharging from sediment basins or sediment traps.
- 3. Stormwater management plan.
 - a. New construction activities. A stormwater management plan approved by the VSMP authority as authorized under the Virginia Stormwater Management Program (VSMP) Regulation (9VAC25-870), or a stormwater management plan prepared in accordance with annual standards and specifications approved by the department. Any operator proposing a new stormwater discharge from construction activities that is not required to obtain stormwater management plan approval from a VSMP authority or does not adopt department-approved annual standards and specifications shall submit the stormwater management plan to the department for review and approval.
 - b. Existing construction activities. Any operator that was authorized to discharge under the general permit issued in 2009, and that intends to continue coverage under this general permit, shall ensure compliance with the requirements of 9VAC25-870-93 through 9VAC25-870-99 of the VSMP Regulation, including but not limited to the water quality and quantity requirements. The SWPPP shall include a description of, and all necessary calculations supporting, all post-construction stormwater management measures that will be installed prior to the completion of the construction process to control pollutants in stormwater discharges after construction operations have been completed. Structural measures should be placed on upland soils to the degree possible. Such measures must be designed and installed in accordance with applicable VESCP authority, VSMP authority, state, and federal requirements, and any necessary permits must be obtained.
- 4. Pollution prevention plan. A pollution prevention plan that addresses potential pollutant-generating activities that may reasonably be expected to affect the quality of stormwater discharges from the construction activity, including any support activity. The pollution prevention plan shall:
 - a. Identify the potential pollutant-generating activities and the pollutant that is expected to be exposed to stormwater;
 - b. Describe the location where the potential pollutant-generating activities will occur, or if identified on the site plan, reference the site plan;
 - c. Identify all nonstormwater discharges, as authorized in Part I E of this general permit, that are or will be commingled with stormwater discharges from the construction activity, including any applicable support activity;
 - d. Identify the person responsible for implementing the pollution prevention practice or practices for each pollutant-generating activity (if other than the person listed as the qualified personnel);
 - e. Describe the pollution prevention practices and procedures that will be implemented to:
 - (1) Prevent and respond to leaks, spills, and other releases including (i) procedures for expeditiously stopping, containing, and cleaning up spills, leaks, and other

- releases; and (ii) procedures for reporting leaks, spills, and other releases in accordance with Part III G;
- (2) Prevent the discharge of spilled and leaked fuels and chemicals from vehicle fueling and maintenance activities (e.g., providing secondary containment such as spill berms, decks, spill containment pallets, providing cover where appropriate, and having spill kits readily available);
- (3) Prevent the discharge of soaps, solvents, detergents, and wash water from construction materials, including the clean-up of stucco, paint, form release oils, and curing compounds (e.g., providing (i) cover (e.g., plastic sheeting or temporary roofs) to prevent contact with stormwater; (ii) collection and proper disposal in a manner to prevent contact with stormwater; and (iii) a similarly effective means designed to prevent discharge of these pollutants);
- (4) Minimize the discharge of pollutants from vehicle and equipment washing, wheel wash water, and other types of washing (e.g., locating activities away from surface waters and stormwater inlets or conveyance and directing wash waters to sediment basins or traps, using filtration devices such as filter bags or sand filters, or using similarly effective controls);
- (5) Direct concrete wash water into a leak-proof container or leak-proof settling basin. The container or basin shall be designed so that no overflows can occur due to inadequate sizing or precipitation. Hardened concrete wastes shall be removed and disposed of in a manner consistent with the handling of other construction wastes. Liquid concrete wastes shall be removed and disposed of in a manner consistent with the handling of other construction wash waters and shall not be discharged to surface waters;
- (6) Minimize the discharge of pollutants from storage, handling, and disposal of construction products, materials, and wastes including (i) building products such as asphalt sealants, copper flashing, roofing materials, adhesives, and concrete admixtures; (ii) pesticides, herbicides, insecticides, fertilizers, and landscape materials; and (iii) construction and domestic wastes such as packaging materials, scrap construction materials, masonry products, timber, pipe and electrical cuttings, plastics, styrofoam, concrete, and other trash or building materials;
- (7) Prevent the discharge of fuels, oils, and other petroleum products, hazardous or toxic wastes, and sanitary wastes; and
- (8) Address any other discharge from the potential pollutant-generating activities not addressed above; and
- f. Describe procedures for providing pollution prevention awareness of all applicable wastes, including any wash water, disposal practices, and applicable disposal locations of such wastes, to personnel in order to comply with the conditions of this general permit. The operator shall implement the procedures described in the SWPPP.
- 5. SWPPP requirements for discharges to impaired waters, surface waters with an applicable TMDL wasteload allocation established and approved prior to the term of this general permit, and exceptional waters. The SWPPP shall:
 - a. Identify the impaired water(s), approved TMDL(s), pollutant(s) of concern, and exceptional waters identified in 9VAC25-260-30 A 3 c, when applicable;
 - b. Provide clear direction that:
 - (1) Permanent or temporary soil stabilization shall be applied to denuded areas within seven days after final grade is reached on any portion of the site;

- (2) Nutrients shall be applied in accordance with manufacturer's recommendations or an approved nutrient management plan and shall not be applied during rainfall events; and
- (3) A modified inspection schedule shall be implemented in accordance with Part I B 4 or Part I B 5.
- 6. Qualified personnel. The name, phone number, and qualifications of the qualified personnel conducting inspections required by this general permit.
- 7. Delegation of authority. The individuals or positions with delegated authority, in accordance with Part III K, to sign inspection reports or modify the SWPPP.
- 8. SWPPP signature. The SWPPP shall be signed and dated in accordance with Part III K.
- B. SWPPP amendments, modification, and updates.
 - 1. The operator shall amend the SWPPP whenever there is a change in the design, construction, operation, or maintenance that has a significant effect on the discharge of pollutants to surface waters and that has not been previously addressed in the SWPPP.
 - 2. The SWPPP must be amended if, during inspections or investigations by the operator's qualified personnel, or by local, state, or federal officials, it is determined that the existing control measures are ineffective in minimizing pollutants in discharges from the construction activity. Revisions to the SWPPP shall include additional or modified control measures designed and implemented to correct problems identified. If approval by the VESCP authority, VSMP authority, or department is necessary for the control measure, revisions to the SWPPP shall be completed no later than seven calendar days following approval. Implementation of these additional or modified control measures must be accomplished as described in Part II G.
 - 3. The SWPPP must clearly identify the contractor(s) that will implement and maintain each control measure identified in the SWPPP. The SWPPP shall be amended to identify any new contractor that will implement and maintain a control measure.
 - 4. The operator shall update the SWPPP no later than seven days following any modification to its implementation. All modifications or updates to the SWPPP shall be noted and shall include the following items:
 - a. A record of dates when:
 - (1) Major grading activities occur;
 - (2) Construction activities temporarily or permanently cease on a portion of the site; and
 - (3) Stabilization measures are initiated;
 - b. Documentation of replaced or modified controls where periodic inspections or other information have indicated that the controls have been used inappropriately or incorrectly and where modified as soon as possible;
 - c. Areas that have reached final stabilization and where no further SWPPP or inspection requirements apply:
 - d. All properties that are no longer under the legal control of the operator and the dates on which the operator no longer had legal control over each property;
 - e. The date of any prohibited discharges, the discharge volume released, and what actions were taken to minimize the impact of the release;
 - f. Measures taken to prevent the reoccurrence of any prohibited discharge; and

- g. Measures taken to address any evidence identified as a result of an inspection required under Part II F.
- 5. Amendments, modifications, or updates to the SWPPP shall be signed in accordance with Part III K.
- C. Public Notification. Upon commencement of land disturbance, the operator shall post conspicuously a copy of the notice of coverage letter near the main entrance of the construction activity. For linear projects, the operator shall post the notice of coverage letter at a publicly accessible location near an active part of the construction project (e.g., where a pipeline crosses a public road). The operator shall maintain the posted information until termination of general permit coverage as specified in Part I F.

D. SWPPP availability.

- 1. Operators with day-to-day operational control over SWPPP implementation shall have a copy of the SWPPP available at a central location on-site for use by those identified as having responsibilities under the SWPPP whenever they are on the construction site.
- 2. The operator shall make the SWPPP and all amendments, modifications, and updates available upon request to the department, the VSMP authority, the EPA, the VESCP authority, local government officials, or the operator of a municipal separate storm sewer system receiving discharges from the construction activity. If an on-site location is unavailable to store the SWPPP when no personnel are present, notice of the SWPPP's location must be posted near the main entrance of the construction site.
- 3. The operator shall make the SWPPP available for public review in an electronic format or in hard copy. Information for public access to the SWPPP shall be posted and maintained in accordance with Part II C. If not provided electronically, public access to the SWPPP may be arranged upon request at a time and at a publicly accessible location convenient to the operator or his designee but shall be no less than once per month and shall be during normal business hours. Information not required to be contained within the SWPPP by this general permit is not required to be released.
- E. SWPPP implementation. The operator shall implement the SWPPP and subsequent amendments, modifications, and updates from commencement of land disturbance until termination of general permit coverage as specified in Part I F.
 - 1. All control measures must be properly maintained in effective operating condition in accordance with good engineering practices and, where applicable, manufacturer specifications. If a site inspection required by Part II F identifies a control measure that is not operating effectively, corrective action(s) shall be completed as soon as practicable, but no later than seven days after discovery or a longer period as established by the VSMP authority, to maintain the continued effectiveness of the control measures.
 - 2. If site inspections required by Part II F identify an existing control measure that needs to be modified or if an additional control measure is necessary for any reason, implementation shall be completed prior to the next anticipated measurable storm event. If implementation prior to the next anticipated measurable storm event is impracticable, then alternative control measures shall be implemented as soon as practicable, but no later than seven days after discovery or a longer period as established by the VSMP authority.

F. SWPPP Inspections.

1. Personnel responsible for on-site and off-site inspections. Inspections required by this general permit shall be conducted by the qualified personnel identified by the operator in the SWPPP. The operator is responsible for insuring that the qualified personnel conduct the inspection.

- 2. Inspection schedule.
 - a. Inspections shall be conducted at a frequency of:
 - (1) At least once every five business days; or
 - (2) At least once every 10 business days and no later than 48 hours following a measurable storm event. In the event that a measurable storm event occurs when there are more than 48 hours between business days, the inspection shall be conducted no later than the next business day.
 - b. Where areas have been temporarily stabilized or land-disturbing activities will be suspended due to continuous frozen ground conditions and stormwater discharges are unlikely, the inspection frequency may be reduced to once per month. If weather conditions (such as above freezing temperatures or rain or snow events) make discharges likely, the operator shall immediately resume the regular inspection frequency.
 - c. Representative inspections may be utilized for utility line installation, pipeline construction, or other similar linear construction activities provided that:
 - (1) Temporary or permanent soil stabilization has been installed and vehicle access may compromise the temporary or permanent soil stabilization and potentially cause additional land disturbance increasing the potential for erosion;
 - (2) Inspections occur on the same frequency as other construction activities;
 - (3) Control measures are inspected along the construction site 0.25 miles above and below each access point (i.e., where a roadway, undisturbed right-of-way, or other similar feature intersects the construction activity and access does not compromise temporary or permanent soil stabilization); and
 - (4) Inspection locations are provided in the report required by Part II F.
- 3. Inspection requirements.
 - a. As part of the inspection, the qualified personnel shall:
 - (1) Record the date and time of the inspection and when applicable the date and rainfall amount of the last measurable storm event;
 - (2) Record the information and a description of any discharges occurring at the time of the inspection;
 - (3) Record any land-disturbing activities that have occurred outside of the approved erosion and sediment control plan:
 - (4) Inspect the following for installation in accordance with the approved erosion and sediment control plan, identification of any maintenance needs, and evaluation of effectiveness in minimizing sediment discharge, including whether the control has been inappropriately or incorrectly used:
 - (a) All perimeter erosion and sediment controls, such as silt fence;
 - (b) Soil stockpiles, when applicable, and borrow areas for stabilization or sediment trapping measures;
 - (c) Completed earthen structures, such as dams, dikes, ditches, and diversions for stabilization;
 - (d) Cut and fill slopes;
 - (e) Sediment basins and traps, sediment barriers, and other measures installed to control sediment discharge from stormwater;
 - (f) Temporary or permanent channel, flume, or other slope drain structures installed to convey concentrated runoff down cut and fill slopes;

- (g) Storm inlets that have been made operational to ensure that sediment laden stormwater does not enter without first being filtered or similarly treated; and
- (h) Construction vehicle access routes that intersect or access paved roads for minimizing sediment tracking;
- (5) Inspect areas that have reached final grade or that will remain dormant for more than 14 days for initiation of stabilization activities;
- (6) Inspect areas that have reached final grade or that will remain dormant for more than 14 days for completion of stabilization activities within seven days of reaching grade or stopping work;
- (7) Inspect for evidence that the approved erosion and sediment control plan, "agreement in lieu of a plan," or erosion and sediment control plan prepared in accordance with department-approved annual standards and specifications has not been properly implemented. This includes but is not limited to:
- (a) Concentrated flows of stormwater in conveyances such as rills, rivulets or channels that have not been filtered, settled, or similarly treated prior to discharge, or evidence thereof:
- (b) Sediment laden or turbid flows of stormwater that have not been filtered or settled to remove sediments prior to discharge;
- (c) Sediment deposition in areas that drain to unprotected stormwater inlets or catch basins that discharge to surface waters. Inlets and catch basins with failing sediments controls due to improper installation, lack of maintenance, or inadequate design are considered unprotected;
- (d) Sediment deposition on any property (including public and private streets) outside of the construction activity covered by this general permit;
- (e) Required stabilization has not been initiated or completed on portions of the site:
- (f) Sediment basins without adequate wet or dry storage volume or sediment basins that allow the discharge of stormwater from below the surface of the wet storage portion of the basin;
- (g) Sediment traps without adequate wet or dry storage or sediment traps that allow the discharge of stormwater from below the surface of the wet storage portion of the trap; and
- (h) Land disturbance outside of the approved area to be disturbed;
- (8) Inspect pollutant generating activities identified in the pollution prevention plan for the proper implementation, maintenance and effectiveness of the procedures and practices;
- (9) Identify any pollutant generating activities not identified in the pollution prevention plan; and
- (10) Identify and document the presence of any evidence of the discharge of pollutants prohibited by this general permit.
- 4. Inspection report. Each inspection report shall include the following items:
 - a. The date and time of the inspection and when applicable, the date and rainfall amount of the last measurable storm event;
 - b. Summarized findings of the inspection;
 - c. The location(s) of prohibited discharges;
 - d. The location(s) of control measures that require maintenance;

- e. The location(s) of control measures that failed to operate as designed or proved inadequate or inappropriate for a particular location;
- f. The location(s) where any evidence identified under Part II F 3 a (7) exists;
- g. The location(s) where any additional control measure is needed that did not exist at the time of inspection:
- h. A list of corrective actions required (including any changes to the SWPPP that are necessary) as a result of the inspection or to maintain permit compliance;
- i. Documentation of any corrective actions required from a previous inspection that have not been implemented; and
- j. The date and signature of the qualified personnel and the operator or its duly authorized representative.

The inspection report and any actions taken in accordance with Part II must be retained by the operator as part of the SWPPP for at least three years from the date that general permit coverage expires or is terminated. The inspection report shall identify any incidents of noncompliance. Where an inspection report does not identify any incidents of noncompliance, the report shall contain a certification that the construction activity is in compliance with the SWPPP and this general permit. The report shall be signed in accordance with Part III K of this general permit.

G. Corrective actions.

- 1. The operator shall implement the corrective action(s) identified as a result of an inspection as soon as practicable but no later than seven days after discovery or a longer period as approved by the VSMP authority. If approval of a corrective action by a regulatory authority (e.g., VSMP authority, VESCP authority, or the department) is necessary, additional control measures shall be implemented to minimize pollutants in stormwater discharges until such approvals can be obtained.
- 2. The operator may be required to remove accumulated sediment deposits located outside of the construction activity covered by this general permit as soon as practicable in order to minimize environmental impacts. The operator shall notify the VSMP authority and the department as well as obtain all applicable federal, state, and local authorizations, approvals, and permits prior to the removal of sediments accumulated in surface waters including wetlands.

PART III CONDITIONS APPLICABLE TO ALL VPDES PERMITS

NOTE: Discharge monitoring is not required for this general permit. If the operator chooses to monitor stormwater discharges or control measures, the operator must comply with the requirements of subsections A, B, and C, as appropriate.

A. Monitoring.

- 1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitoring activity.
- 2. Monitoring shall be conducted according to procedures approved under 40 CFR Part 136 or alternative methods approved by the U.S. Environmental Protection Agency, unless other procedures have been specified in this general permit. Analyses performed according to test procedures approved under 40 CFR Part 136 shall be performed by an environmental laboratory certified under regulations adopted by the Department of General Services (1VAC30-45 or 1VAC30-46).

3. The operator shall periodically calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at intervals that will ensure accuracy of measurements.

B. Records.

- 1. Monitoring records and reports shall include:
 - a. The date, exact place, and time of sampling or measurements;
 - b. The individual(s) who performed the sampling or measurements;
 - c. The date(s) and time(s) analyses were performed;
 - d. The individual(s) who performed the analyses;
 - e. The analytical techniques or methods used; and
 - f. The results of such analyses.
- 2. The operator shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this general permit, and records of all data used to complete the registration statement for this general permit, for a period of at least three years from the date of the sample, measurement, report or request for coverage. This period of retention shall be extended automatically during the course of any unresolved litigation regarding the regulated activity or regarding control standards applicable to the operator, or as requested by the board.

C. Reporting monitoring results.

- 1. The operator shall update the SWPPP to include the results of the monitoring as may be performed in accordance with this general permit, unless another reporting schedule is specified elsewhere in this general permit.
- 2. Monitoring results shall be reported on a discharge monitoring report (DMR); on forms provided, approved or specified by the department; or in any format provided that the date, location, parameter, method, and result of the monitoring activity are included.
- 3. If the operator monitors any pollutant specifically addressed by this general permit more frequently than required by this general permit using test procedures approved under 40 CFR Part 136 or using other test procedures approved by the U.S. Environmental Protection Agency or using procedures specified in this general permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or reporting form specified by the department.
- 4. Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in this general permit.
- D. Duty to provide information. The operator shall furnish, within a reasonable time, any information which the board may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this general permit or to determine compliance with this general permit. The board, department, EPA, or VSMP authority may require the operator to furnish, upon request, such plans, specifications, and other pertinent information as may be necessary to determine the effect of the wastes from his discharge on the quality of surface waters, or such other information as may be necessary to accomplish the purposes of the CWA and the Virginia Stormwater Management Act. The operator shall also furnish to the board, department, EPA, or VSMP authority, upon request, copies of records required to be kept by this general permit.
- E. Compliance schedule reports. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this general permit shall be submitted no later than 14 days following each schedule date.

- F. Unauthorized stormwater discharges. Pursuant to § 62.1-44.5 of the Code of Virginia, except in compliance with a state permit issued by the department, it shall be unlawful to cause a stormwater discharge from a construction activity.
- G. Reports of unauthorized discharges. Any operator who discharges or causes or allows a discharge of sewage, industrial waste, other wastes or any noxious or deleterious substance or a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117, 40 CFR Part 302, or § 62.1-44.34:19 of the Code of Virginia that occurs during a 24-hour period into or upon surface waters or who discharges or causes or allows a discharge that may reasonably be expected to enter surface waters, shall notify the Department of Environmental Quality of the discharge immediately upon discovery of the discharge, but in no case later than within 24 hours after said discovery. A written report of the unauthorized discharge shall be submitted to the department and the VSMP authority within five days of discovery of the discharge. The written report shall contain:
 - 1. A description of the nature and location of the discharge;
 - 2. The cause of the discharge;
 - 3. The date on which the discharge occurred;
 - 4. The length of time that the discharge continued;
 - 5. The volume of the discharge;
 - 6. If the discharge is continuing, how long it is expected to continue;
 - 7. If the discharge is continuing, what the expected total volume of the discharge will be; and
 - 8. Any steps planned or taken to reduce, eliminate and prevent a recurrence of the present discharge or any future discharges not authorized by this general permit.

Discharges reportable to the department and the VSMP authority under the immediate reporting requirements of other regulations are exempted from this requirement.

- H. Reports of unusual or extraordinary discharges. If any unusual or extraordinary discharge including a "bypass" or "upset", as defined herein, should occur from a facility and the discharge enters or could be expected to enter surface waters, the operator shall promptly notify, in no case later than within 24 hours, the department and the VSMP authority by telephone after the discovery of the discharge. This notification shall provide all available details of the incident, including any adverse effects on aquatic life and the known number of fish killed. The operator shall reduce the report to writing and shall submit it to the department and the VSMP authority within five days of discovery of the discharge in accordance with Part III I 2. Unusual and extraordinary discharges include but are not limited to any discharge resulting from:
 - 1. Unusual spillage of materials resulting directly or indirectly from processing operations;
 - 2. Breakdown of processing or accessory equipment;
 - 3. Failure or taking out of service of some or all of the facilities; and
 - 4. Flooding or other acts of nature.
- I. Reports of noncompliance. The operator shall report any noncompliance which may adversely affect surface waters or may endanger public health.
 - 1. An oral report to the department and the VSMP authority shall be provided within 24 hours from the time the operator becomes aware of the circumstances. The following shall be included as information that shall be reported within 24 hours under this subdivision:

- a. Any unanticipated bypass; and
- b. Any upset that causes a discharge to surface waters.
- 2. A written report shall be submitted within five days and shall contain:
 - a. A description of the noncompliance and its cause;
 - b. The period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and
 - c. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

The department may waive the written report on a case-by-case basis for reports of noncompliance under Part III I if the oral report has been received within 24 hours and no adverse impact on surface waters has been reported.

3. The operator shall report all instances of noncompliance not reported under Part III I 1 or 2 in writing as part of the SWPPP. The reports shall contain the information listed in Part III I 2.

NOTE: The reports required in Part III G, H and I shall be made to the department and the VSMP authority. Reports may be made by telephone, email, or by fax. For reports outside normal working hours, leaving a recorded message shall fulfill the immediate reporting requirement. For emergencies, the Virginia Department of Emergency Management maintains a 24-hour telephone service at 1-800-468-8892.

- 4. Where the operator becomes aware of a failure to submit any relevant facts, or submittal of incorrect information in any report, including a registration statement, to the department or the VSMP authority, the operator shall promptly submit such facts or correct information.
- J. Notice of planned changes.
 - 1. The operator shall give notice to the department and the VSMP authority as soon as possible of any planned physical alterations or additions to the permitted facility or activity. Notice is required only when:
 - a. The operator plans an alteration or addition to any building, structure, facility, or installation that may meet one of the criteria for determining whether a facility is a new source in 9VAC25-870-420;
 - b. The operator plans an alteration or addition that would significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this general permit; or
 - 2. The operator shall give advance notice to the department and VSMP authority of any planned changes in the permitted facility or activity, which may result in noncompliance with state permit requirements.
- K. Signatory requirements.
 - 1. Registration statement. All registration statements shall be signed as follows:
 - a. For a corporation: by a responsible corporate officer. For the purpose of this chapter, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy-making or decision-making functions for the corporation; or (ii) the manager of one or more manufacturing, production, or operating facilities, provided the manager is authorized to make management decisions that govern the operation of the regulated facility including having the

explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for state permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

- b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or
- c. For a municipality, state, federal, or other public agency: by either a principal executive officer or ranking elected official. For purposes of this chapter, a principal executive officer of a public agency includes: (i) the chief executive officer of the agency or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.
- 2. Reports, etc. All reports required by this general permit, including SWPPPs, and other information requested by the board or the department shall be signed by a person described in Part III K 1 or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - a. The authorization is made in writing by a person described in Part III K 1;
 - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the operator. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
 - c. The signed and dated written authorization is included in the SWPPP. A copy must be provided to the department and VSMP authority, if requested.
- 3. Changes to authorization. If an authorization under Part III K 2 is no longer accurate because a different individual or position has responsibility for the overall operation of the construction activity, a new authorization satisfying the requirements of Part III K 2 shall be submitted to the VSMP authority as the administering entity for the board prior to or together with any reports or information to be signed by an authorized representative.
- 4. Certification. Any person signing a document under Part III K 1 or 2 shall make the following certification:
- "I certify under penalty of law that I have read and understand this document and that this document and all attachments were prepared in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."
- L. Duty to comply. The operator shall comply with all conditions of this general permit. Any state permit noncompliance constitutes a violation of the Virginia Stormwater Management Act and the Clean Water Act, except that noncompliance with certain provisions of this general permit may constitute a violation of the Virginia Stormwater Management Act but not the Clean Water Act. Permit noncompliance is grounds for enforcement action; for state permit

termination, revocation and reissuance, or modification; or denial of a state permit renewal application.

The operator shall comply with effluent standards or prohibitions established under § 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if this general permit has not yet been modified to incorporate the requirement.

- M. Duty to reapply. If the operator wishes to continue an activity regulated by this general permit after the expiration date of this general permit, the operator shall submit a new registration statement at least 90 days before the expiration date of the existing general permit, unless permission for a later date has been granted by the board. The board shall not grant permission for registration statements to be submitted later than the expiration date of the existing general permit.
- N. Effect of a state permit. This general permit does not convey any property rights in either real or personal property or any exclusive privileges, nor does it authorize any injury to private property or invasion of personal rights, or any infringement of federal, state or local law or regulations.
- O. State law. Nothing in this general permit shall be construed to preclude the institution of any legal action under, or relieve the operator from any responsibilities, liabilities, or penalties established pursuant to any other state law or regulation or under authority preserved by § 510 of the Clean Water Act. Except as provided in general permit conditions on "bypassing" (Part III U) and "upset" (Part III V), nothing in this general permit shall be construed to relieve the operator from civil and criminal penalties for noncompliance.
- P. Oil and hazardous substance liability. Nothing in this general permit shall be construed to preclude the institution of any legal action or relieve the operator from any responsibilities, liabilities, or penalties to which the operator is or may be subject under §§ 62.1-44.34:14 through 62.1-44.34:23 of the State Water Control Law or § 311 of the Clean Water Act.
- Q. Proper operation and maintenance. The operator shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances), which are installed or used by the operator to achieve compliance with the conditions of this general permit. Proper operation and maintenance also includes effective plant performance, adequate funding, adequate staffing, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems, which are installed by the operator only when the operation is necessary to achieve compliance with the conditions of this general permit.
- R. Disposal of solids or sludges. Solids, sludges or other pollutants removed in the course of treatment or management of pollutants shall be disposed of in a manner so as to prevent any pollutant from such materials from entering surface waters and in compliance with all applicable state and federal laws and regulations.
- S. Duty to mitigate. The operator shall take all steps to minimize or prevent any discharge in violation of this general permit that has a reasonable likelihood of adversely affecting human health or the environment.
- T. Need to halt or reduce activity not a defense. It shall not be a defense for an operator in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this general permit.
 - U. Bypass.
 - 1. "Bypass," as defined in 9VAC25-870-10, means the intentional diversion of waste streams from any portion of a treatment facility. The operator may allow any bypass to occur that does not cause effluent limitations to be exceeded, but only if it also is for

essential maintenance to ensure efficient operation. These bypasses are not subject to the provisions of Part III U 2 and 3.

2. Notice.

- a. Anticipated bypass. If the operator knows in advance of the need for a bypass, the operator shall submit prior notice to the department, if possible at least 10 days before the date of the bypass.
- b. Unanticipated bypass. The operator shall submit notice of an unanticipated bypass as required in Part III I.

3. Prohibition of bypass.

- a. Except as provided in Part III U 1, bypass is prohibited, and the board or department may take enforcement action against an operator for bypass unless:
- (1) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage. Severe property damage means substantial physical damage to property, damage to the treatment facilities that causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production;
- (2) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance; and
- (3) The operator submitted notices as required under Part III U 2.
- b. The department may approve an anticipated bypass, after considering its adverse effects, if the department determines that it will meet the three conditions listed in Part III U 3 a.

V. Upset.

- 1. An "upset," as defined in 9VAC25-870-10, means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based state permit effluent limitations because of factors beyond the reasonable control of the operator. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
- 2. An upset constitutes an affirmative defense to an action brought for noncompliance with technology-based state permit effluent limitations if the requirements of Part III V 4 are met. A determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is not a final administrative action subject to judicial review.
- 3. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.
- 4. An operator who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that:
 - a. An upset occurred and that the operator can identify the cause(s) of the upset;
 - b. The permitted facility was at the time being properly operated;

- c. The operator submitted notice of the upset as required in Part III I; and
- d. The operator complied with any remedial measures required under Part III S.
- 5. In any enforcement proceeding, the operator seeking to establish the occurrence of an upset has the burden of proof.
- W. Inspection and entry. The operator shall allow the department as the board's designee, the VSMP authority, EPA, or an authorized representative of either entity (including an authorized contractor), upon presentation of credentials and other documents as may be required by law to:
 - 1. Enter upon the operator's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this general permit;
 - 2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this general permit;
 - 3. Inspect and photograph at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this general permit; and
 - 4. Sample or monitor at reasonable times, for the purposes of ensuring state permit compliance or as otherwise authorized by the Clean Water Act or the Virginia Stormwater Management Act, any substances or parameters at any location.

For purposes of this section, the time for inspection shall be deemed reasonable during regular business hours, and whenever the facility is discharging. Nothing contained herein shall make an inspection unreasonable during an emergency.

- X. State permit actions. State permits may be modified, revoked and reissued, or terminated for cause. The filing of a request by the operator for a state permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any state permit condition.
 - Y. Transfer of state permits.
 - 1. State permits are not transferable to any person except after notice to the department. Except as provided in Part III Y 2, a state permit may be transferred by the operator to a new operator only if the state permit has been modified or revoked and reissued, or a minor modification made, to identify the new operator and incorporate such other requirements as may be necessary under the Virginia Stormwater Management Act and the Clean Water Act.
 - 2. As an alternative to transfers under Part III Y 1, this state permit may be automatically transferred to a new operator if:
 - a. The current operator notifies the department at least 30 days in advance of the proposed transfer of the title to the facility or property;
 - b. The notice includes a written agreement between the existing and new operators containing a specific date for transfer of state permit responsibility, coverage, and liability between them; and
 - c. The department does not notify the existing operator and the proposed new operator of its intent to modify or revoke and reissue the state permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in Part III Y 2 b.
 - 3. For ongoing construction activity involving a change of operator, the new operator shall accept and maintain the existing SWPPP, or prepare and implement a new SWPPP prior to taking over operations at the site.

Z. Severability. The provisions of this general permit are severable, and if any provision of this general permit or the application of any provision of this state permit to any circumstance, is held invalid, the application of such provision to other circumstances and the remainder of this general permit shall not be affected thereby.

9VAC25-880-80. (Repealed.)
9VAC25-880-82. (Repealed.)
9VAC25-880-84. (Repealed.)
9VAC25-880-86. (Repealed.)
9VAC25-880-88. (Repealed.)
9VAC25-880-90. (Repealed.)

9VAC25-880-100. Delegation of authority.

The director, or his designee, may perform any act of the board provided under this chapter, except as limited by § 62.1-44.14 of the Code of Virginia.

FORMS (9VAC25-880)

<u>Department of Environmental Quality Construction Activity Operator Permit Fee Form (rev.</u> 01/2014)

Notice of Termination - General VPDES Permit for Discharges of Stormwater from Construction Activities (VAR10) (rev. 01/2014)

Registration Statement - General VPDES Permit for Discharges of Stormwater from Construction Activities (VAR10) (rev. 01/2014)

<u>Transfer Agreement - General VPDES Permit for Discharges of Stormwater from Construction Activities (VAR10) (rev. 01/2014)</u>

APPENDIX F

General Permit for Discharges of Stormwater from Construction Activities Registration Statement

Registration Statement General VPDES Permit for Discharges of Stormwater from Construction Activities (VAR10)

(Please Type or Print All Information)

Construction Activity Operator: (Gene signed by the appropriate person associated)			his operator. The (Certification in Item #12 must be
Name:				
Contact:				
Mailing Address:				
City:	State:	Zip:	Phone:	
Email address (if available):				
Indicate if DEQ may transmit general per	mit correspondence e	electronically: Yes	S No No	
Existing General Permit Registration N	Number (for renewal	s only):		
Name and Location of the Constructio	on Activity:			
Name:				
Address (if available):				
City:		State:		Zip:
County (if not located within a City):				
Latitude (decimal degrees):				
Name and Location of all Off-site Supp				
Name:				
Address (if available):				
City:				
County (if not located within a City):				
_atitude (decimal degrees):				
Status of the Construction Activity (ch				
Nature of the Construction Activity (e.			l, agricultural, oil	and gas, etc.):
Name of the Receiving Water(s) and H	-	•		
Name:				
HUC:			•	
If the discharge is through a Municipal	I Separate Storm Se	wer System (MS	4), the name of the	e MS4 operator:
Estimated Project Start and Completion	on Date:			
Start Date (mm/dd/yyyy):		Completion	Date (mm/dd/yyyy)):
Total Land Area of Development (to th				
Estimated Area to be Disturbed (to the		-		
Is the area to be disturbed part of a lar	rger common plan o	f development or	sale? Yes N	lo 🗌
A stormwater pollution prevention pla VPDES Permit for Discharges of Storr By signing this Registration Statemen	an (SWPPP) must be mwater from Constru	e prepared in ac uction Activities	cordance with the prior to submitting	e requirements of the Genera og this Registration Statement
Certification: "I certify under penalty of and all attachments were prepared in accevaluated the information submitted. Ba directly responsible for gathering the iraccurate, and complete. I am aware that fine and imprisonment for knowing violati	law that I have read cordance with a system ased on my inquiry of information, the informations."	and understand to em designed to ass f the person or per mation submitted to penalties for sub	this Registration St sure that qualified persons who manage is to the best of mitting false inform	atement and that this document personnel properly gathered and ge the system or those persons my knowledge and belief true nation including the possibility of
Printed Name:				
Signature:				
(Please sign in INK. This Certification Item #1.)	must be signed by	the appropriate p	erson associated	with the operator identified in

01/2014 Page 1 of 1

Instructions for Completing the Registration Statement General VPDES Permit for Discharges of Stormwater from Construction Activities (VAR10)

GENERAL

A. Coverage Under this General Permit.

Any operator applying for coverage under this general permit who is required to submit a Registration Statement (see Section B below) must submit a complete Registration Statement to the Department. The Registration Statement serves as a Notice of Intent for coverage under the General VPDES Permit for Discharges of Stormwater from Construction Activities (VAR10).

B. Single-family Residences.

Operators with an existing stormwater discharge or proposing a new stormwater discharge associated with the construction of a single-family residence separately built, disturbing less than one acre and part of a larger common plan of development or sale is not required to submit a Registration Statement, provided that the stormwater management plan for the larger common plan of development provides permanent control measures (i.e., stormwater management facilities) encompassing the single family residence.

Operators of these types of discharges are authorized to discharge under this general permit immediately upon the general permit's effective date of July 1, 2014.

C. To Apply for Permit Coverage.

- 1. New Construction Activities. Any operator proposing a new stormwater discharge from construction activities shall submit a complete Registration Statement to the Department prior to the commencement of land disturbance, unless exempted by Section B above. Any operator proposing a new stormwater discharge from construction activities in response to a public emergency where the related work requires immediate authorization to avoid imminent endangerment to human health or the environment is immediately authorized to discharge under this general permit and must submit a complete Registration Statement to the Department no later than 30 days after commencing land disturbance; documentation to substantiate the occurrence of the public emergency must accompany the Registration Statement.
- **2. Existing Construction Activities.** Any operator that was authorized to discharge under the general permit issued in 2009, and who intends to continue coverage under this general permit, shall submit a complete Registration Statement to the Department on or before June 1, 2014, unless exempted by Section B above.

D. Where to Submit Registration Statements.

All Registration Statements should be submitted to:

Department of Environmental Quality Office of Stormwater Management, 10th Floor P.O. Box 1105 Richmond, VA 23218

LINE-BY-LINE INSTRUCTIONS

Item 1: Construction Activity Operator Information.

"Operator" means the owner or operator of any facility or activity subject to the Stormwater Management Act and regulations. In the context of stormwater associated with a large or small construction activity, operator means any person associated with a construction project that meets either of the following two criteria: (i) the person has direct operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications or (ii) the person has day-to-day operational control of those activities at a project that are necessary to ensure compliance with a stormwater pollution prevention plan for the site or other state permit or VSMP authority permit conditions (i.e., they are authorized to direct workers at a site to carry out activities required by the

stormwater pollution prevention plan or comply with other permit conditions).

The entities that are considered operators will commonly consist of the owner or developer of a project (the party with control of project plans and specifications) or the general contractor (the party with day to day operational control of the activities at the project site which are necessary to ensure compliance with the general permit).

Provide the legal name (do not use a colloquial name), contact, mailing address, telephone number, and email address (if available) of the construction activity operator; general permit coverage will be issued to this operator. Indicate if the Department may transmit general permit correspondence electronically.

Item 2: Existing General Permit Registration Number.

For reapplications only, provide the existing general permit registration number for the construction activity. This item does not need to be completed for new construction activities applying for general permit coverage.

Item 3: Name and Location of the Construction Activity Information.

Provide the official name, street address (if available), city or county (if not located within a City) of the construction activity. Also, provide the latitude and longitude in decimal degrees of the approximate center of the construction activity (e.g., N 37.5000, W 77.5000).

Name and Location of Off-site Support Activity Information.

This general permit also authorizes stormwater discharges from support activities (e.g., concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, borrow areas) located on-site or off-site provided that (i) the support activity is directly related to a construction activity that is required to have general permit coverage; (ii) the support activity is not a commercial operation, nor does it serve multiple unrelated construction activities by different operators; (iii) the support activity does not operate beyond the completion of the construction activity is supports; (iv) the support activity is identified in the registration statement at the time of general permit coverage; (v) appropriate control measures are identified in a SWPPP and implemented to address the discharges from the support activity areas; and (vi) all applicable state, federal, and local approvals are obtained for the support activity.

Provide the official name, street address (if available), City and County (if not located within a City) of all off-site support activities to be covered under this general permit. Also, provide the latitude and longitude in decimal degrees of the approximate center of the off-site support activities (e.g., N 37.5000, W 77.5000). Also, if an off-site support activity is going to be covered under this general permit the total land area of the off-site support activity and the estimated area to be disturbed by the off-site support activity need to be included in Item #9.

Item 4: Status of the Construction Activity.

Indicate the appropriate status (Federal, State, Public, or Private) of the construction activity.

Item 5: Nature of the Construction Activity.

Provide a brief description of the construction activity, such as commercial, residential, agricultural, oil and gas, etc. This list is not all inclusive.

Item 6: Receiving Waters(s) and HUC Information.

Provide the name of the receiving water(s) and corresponding HUC for all stormwater discharges including any stormwater discharges from off-site support activities to be covered under this general permit.

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Hydrologic Unit Code or HUC is a watershed unit established in the most recent version of Virginia's 6th order national watershed boundary dataset.

Item 7: MS4 Information.

If stormwater is discharged through a municipal separate storm sewer system (MS4), provide the name of the MS4 operator. The name of the MS4 operator is generally the Town, City, County, Institute or Federal facility where the construction activity is located.

Item 8: Construction Activity Start and Completion Date Information.

Provide the estimated start date (month/day/year) of the construction activity. Provide the estimated completion date (month/day/year) of the construction activity.

Item 9: Construction Activity Area Information.

Provide the total area (to the nearest one-hundredth acre) of the development (i.e.., the total acreage of the larger common plan of development or sale). Include the total acreage of any off-site support activity to be covered under this general permit.

Provide the estimated area (to the nearest one-hundredth acre) to be disturbed by the construction activity. Include the estimated area of land disturbance that will occur at any off-site support activity to be covered under this general permit.

Item 10: Common Plan of Development or Sale Information.

Indicate if the area to be disturbed by the construction activity is part of a larger common plan of development or sale. Larger common plan of development or sale is defined as a contiguous area where separate and distinct construction may be taking place at different times on different schedules. Plan is broadly defined as any announcement or documentation, including a sign, public notice or hearing, sales pitch, advertisement, drawing, permit application, zoning request, etc., or physical demarcation such as boundary signs, lot stakes, or surveyor markings indicating that construction activities may occur.

Item 11: Stormwater Pollution Prevention Plan (SWPPP).

A Stormwater Pollution Prevention Plan (SWPPP) must be prepared in accordance with the requirements of the General VPDES Permit for Discharges of Stormwater from Construction Activities (VAR10) prior to submitting this Registration Statement. By signing this Registration Statement the operator is certifying that the SWPPP has been prepared.

Item 12: Certification.

A properly authorized individual associated with the operator identified in Item 1 of the Registration Statement is responsible for certifying and signing the Registration Statement. Please sign the Registration Statement in INK.

State statutes provide for severe penalties for submitting false information on the Registration Statement. State regulations require that the Registration Statement be signed as follows:

- a. For a corporation: by a responsible corporate officer. For the purpose of this part, a responsible corporate officer means:
 - (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy-making or decision-making functions for the corporation, or
 - (ii) the manager of one or more manufacturing, production, or operating facilities, provided the manager is authorized to make management decisions that govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to

gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

- b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively.
- c. For a municipality, state, federal, or other public agency: by either a principal executive officer or ranking elected official. For purposes of this part, a principal executive officer of a public agency includes:
 - (i) The chief executive officer of the agency, or
 - (ii) A senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.

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DEPARTMENT OF ENVIRONMENTAL QUALITY CONSTRUCTION ACTIVITY OPERATOR PERMIT FEE FORM

(Please Type or Print All Information)

Instructions: Applicants for a Construction Activity Individual Permit are required to pay permit application fees. Fees are also required for registration for coverage under a Construction Activity General Permit. Fees must be paid when applications for state permit issuance, reissuance, modification or transfer are submitted. Applications will be considered incomplete if the proper fee is not paid and will not be processed until the fee is received.

The fee schedule for state permits is included with this form. Fees for state permit issuance, reissuance, maintenance, modification and transfer are included. Once you have determined the fee for the type of application you are submitting, complete this form. The original copy of the form and your check or money order payable to "Treasurer of Virginia" should be mailed to:

Department of Environmental Quality Receipts Control P.O. Box 1104 Richmond, VA 23218

A copy of this form and a copy of your check or money order should accompany the permit application (or registration statement). You should retain a copy for your records.

Construction Activity Operator: Name: Mailing Address: _____ State:_____ Zip:_____ Phone:_____ Email address (if available): Name and Location of the Construction Activity: Name: City: State: Zip: Type of State Permit: Construction Activity Individual Permit Construction Activity General Permit (from Fee Schedule) Type of Action: New Issuance Reissuance Maintenance Modification Transfer Amount of Fee Submitted (from Fee Schedule): Existing General Permit Registration Number (if applicable): FOR DEQ USE ONLY DC #: Date:

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CONSTRUCTION ACTIVITY PERMIT FEE SCHEDULE

A. Individual Permits. The fee for filing a state permit application for a Construction Activity Individual Permit issued by the Board is as follows: (NOTE: Individual permittees pay an annual permit maintenance fee instead of a reapplication fee. The permittee is billed separately by DEQ for the annual permit maintenance fee.)

TYPE OF STATE PERMIT	ISSUANCE
Individual Permit for Discharges from Construction Activities	\$15,000

B. Registration Statements. The fee for filing a state permit application (registration statement) for coverage under a Construction Activity General Permit issued by the Board, including a state or federal agency that does not administer a project in accordance with approved annual standards and specifications, is as follows:

TYPE OF STATE PERMIT	ISSUANCE
General / Stormwater Management - Small Construction Activity/Land Clearing (Areas within common plans of development or sale with land-disturbance acreage less than one acre)	\$290
General / Stormwater Management - Small Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land-disturbance acreage equal to or greater than one acre and less than five acres)	\$2,700
General / Stormwater Management - Large Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land-disturbance acreage equal to or greater than five acres and less than 10 acres)	\$3,400
General / Stormwater Management - Large Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land-disturbance acreage equal to or greater than 10 acres and less than 50 acres)	\$4,500
General / Stormwater Management - Large Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land-disturbance acreage equal to or greater than 50 acres and less than 100 acres)	\$6,100
General / Stormwater Management - Large Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land-disturbance acreage equal to or greater than 100 acres)	\$9,600

The fee for filing a state permit application (registration statement) for coverage under a Construction Activity General Permit issued by the Board for a state or federal agency that administers a project in accordance with approved annual standards and specifications is as follows:

TYPE OF STATE PERMIT	ISSUANCE
Construction General / Stormwater Management – Phase I Land Clearing ("Large" Construction Activity – Sites or common plans of development or sale equal to or greater than 5 acres)	\$750
Construction General / Stormwater Management – Phase II Land Clearing ("Small" Construction Activity – Sites or common plans of development or sale equal to or greater than 1 acre and less than 5 acres)	\$450

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C. State Permit Modification or Transfer Fees. The following fees apply to the modification or transfer of a Construction Activity Individual Permit or a Construction Activity General Permit issued by the Board. The fee assessed shall be based on the total disturbed acreage of the construction activity. In addition to the state permit modification fee, modifications resulting in an increase in total disturbed acreage shall pay the difference in the initial Construction Activity General Permit fee paid and the Construction Activity General Permit fee that would have applied for the total disturbed acreage in Section B above.

TYPE OF STATE PERMIT	MODIFICATION
General / Stormwater Management – Small Construction Activity/Land Clearing (Areas within common plans of development or sale with land disturbance acreage less than one acre)	\$20
General / Stormwater Management – Small Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land-disturbance acreage equal to or greater than one and less than five acres)	\$200
General / Stormwater Management – Large Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land-disturbance acreage equal to or greater than five acres and less than 10 acres)	\$250
General / Stormwater Management – Large Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land-disturbance acreage equal to or greater than 10 acres and less than 50 acres)	\$300
General / Stormwater Management – Large Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land-disturbance acreage equal to or greater than 50 acres and less than 100 acres)	\$450
General / Stormwater Management – Large Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land-disturbance acreage equal to or greater than 100 acres)	\$700
Individual Permit for Discharges from Construction Activities	\$5,000

D. State Permit Maintenance Fees. The following annual state permit maintenance fees apply to each state permit identified below, including expired permits that have been administratively continued. No annual state permit maintenance fee is required for coverage under a Construction Activity General Permit for a state or federal agency that administers a project in accordance with approved annual standards and specifications.

TYPE OF STATE PERMIT	MAINTENANCE
General / Stormwater Management – Small Construction Activity/Land Clearing (Areas within common plans of development or sale with land disturbance acreage less than one acre)	\$50
General / Stormwater Management – Small Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land-disturbance acreage equal to or greater than one and less than five acres)	\$400
General / Stormwater Management – Large Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land-disturbance acreage equal to or greater than five acres and less than 10 acres)	\$500
General / Stormwater Management – Large Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land-disturbance acreage equal to or greater than 10 acres and less than 50 acres)	\$650
General / Stormwater Management – Large Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land-disturbance acreage equal to or greater than 50 acres and less than 100 acres)	\$900
General / Stormwater Management – Large Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land-disturbance acreage equal to or greater than 100 acres)	\$1,400
Individual Permit for Discharges from Construction Activities	\$3,000

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APPENDIX G

Erosion Control and Stormwater

Management Plan Application Form &

Checklist

Erosion and Sediment Control and Stormwater Management Plan Application Form & Checklist

GENERAL INFORMATION

Application Date:		
Project Name:	_	
Project Address:	_	
Tax Map / Parcel Number(s):		
PROPE	RTY OWNER / DEVELOPE	ER
Firm Name:		
Contact Person:		
Title:		
Address:		
City / State / Zip:		
Telephone:		
Email:		
	APPLICANT	
Firm Name:		
Contact Person:		
Title:		
Address:		
City / State / Zip:		
Telephone:		
Email:		
All the information requested abov complete.	e must be provided fo	r the submittal to be deemed
SWM Application Form & Checklist Project Name: Tax / Parcel No(s):		SWPPP Dated: Plans Dated: Submittal Number:

INFORMATION SUBMITTED

SWM Application Form & Checklist Page 2 of 17 Project Name: Tax / Parcel No(s):	SWPPP Dated: Plans Dated: Submittal Number:
Licensed Professional / Applicant Signature Printed Name	Date
Licensed Professional / Applicant Signature	Date
Required Certification I have reviewed the accompanying plan submission, this ch Ordinance and applicable Subdivision Ordinance and Zoning submitted plan is complete and meets all applicable require knowledge.	g Ordinance provisions. The
Additional comments may be warranted depending upon how addressed.	w prior submittal comments were
For all second and subsequent submittals, the submitting Engither that provides explanation as to how each comment is address plan or narrative location. In addition, significant changes in	ssed and references the relevant
All submittals shall include this completed checklist, and cert by the responsible licensed professional or applicant as requi	-
 approval) Erosion and Sediment Control and Stormwater Manag provided and approved prior to VSMP permit approva Other Local, State, and Federal Requirements 	,
calculations. BMP Maintenance Agreement (must be provided and	approved prior to plan
 Stormwater Management Design Plan(s) (Plans, Profile Stormwater Pollution Prevention Plan (SWPPP), included Report, Pollution Prevention Plan, and Stormwater Management 	ling Erosion and Sediment Control
Application Form and Checklist Erosion and Sediment Control Plan(s) (Plans, Details, e	etc.) or Agreement in-lieu-of
☐ Certified and completed Erosion and Sediment Contro	ol and Stormwater Management
☐ Proof of payment of VSMP Permit Fee (Department po☐ Payment of VSMP Authority Permit Fee	ortion), as required.
☐ Proof of VSMP General Permit Registration Statement	completion, as required.

Section 1: Erosion and Sediment Control

GENERAL
\Box Complete set of plans; include all sheets pertaining to the site grading and stormwater and any activities impacting erosion and sediment control and drainage:
 Existing conditions Demolition Site grading Erosion and sediment control Storm sewer systems Stormwater management facilities Utility layout Landscaping On-site and off-site borrow and disposal areas that do not have separate approved ESC Plans
□ Variance if necessary, requested in writing, for the plan approving authority to waive or modify any of the minimum standards and specifications of the Virginia Erosion and Sediment Control Handbook (VESCH) deemed inappropriate based on site conditions specific to this review case only. Variances which are approved shall be properly documented in the plan and become part of the approved erosion and sediment control plan for the site.
☐ Professional's seal; the designer's original seal, signature, and date are required on the cover sheet of each Narrative and each set of Plan Sheets, as required by the VSMP Authority. A facsimile is acceptable for subsequent Plan Sheets.
PLANS
☐ Vicinity man, a small man locating the cite in relation to the surrounding area. Include

any landmarks that might assist in locating the site.
\square Indicate north - The direction of north in relation to the site.
\square <u>Off-site areas</u> - Include any off-site land-disturbing activities (e.g., borrow sites, disposal areas, waste areas, utility extensions, etc.) not covered by a separate approved ESC Plan.
☐ <u>Erosion and sediment control notes</u> - At a minimum, include the erosion and sediment control notes found in the <i>VESCH</i> . Ensure that all applicable Minimum Standards not covered elsewhere in the plan have been addressed. Include a note that any off-site land-disturbing activity associated with the project must have an approved ESC Plan.

SWM Application Form & Checklist	Page 3 of 17	SWPPP Dated:	
Project Name:		Plans Dated:	
Tax / Parcel No(s):		Submittal Number:	

☐ <u>Legend</u> - Provide a complete listing of all ESC measuruniform code symbol and the standard and specification nunecessary to identify pertinent features in the plan.	-
$\hfill\Box$ Property lines and easements - Show all property and ease property, list the deed book and page number and the property	
\square Existing vegetation - The existing tree lines, grassed areas	, or unique vegetation.
\square <u>Limits of clearing and grading</u> – Delineate all areas that ar	e to be cleared and graded.
☐ <u>Disturbed area estimates</u> – in acres or square feet.	
$\hfill\Box$ <u>Protection of areas not being cleared</u> - Fencing or other are not to be disturbed on the site.	measures to protect areas that
\Box <u>Critical areas</u> – Note all critical areas on the plan.	
$\hfill \square$ <u>Existing contours</u> - The existing contours of the site at no interval.	o more than a five foot contour
☐ <u>Final contours and elevations</u> - Changes to the existing contours, at no more than a two foot contour interval. N (FFE) of all buildings on site, including basements.	
☐ Existing and proposed spot elevations — to supplement of topography, or site grading information. Spot elevations mainstances, especially if terrain is in a low lying area or relative	y replace final contours in some
☐ Existing site features — includes roads, buildings, ho structures, and other important surface features of the site.	mes, utilities, streams, fences,
\square Soils map – includes soil symbols, boundaries, and legend Soil Survey of Campbell County.	d in accordance with the current
☐ Environmental inventory — generally includes tidal s wetlands, resource protection area, hydric soils and slopes wetlands, provide a copy of issued permits or satisfact permits are being pursued for the entire project.	s steeper than 25 percent. For
SWM Application Form & Checklist Page 4 of 17 Project Name: Tax / Parcel No(s):	SWPPP Dated: Plans Dated: Submittal Number:

☐ <u>100-year floodplain limits</u> — also includes any special fl based on appropriate Federal Management Agency Flood Flood Hazard Boundary Maps (FHBMs) of Campbell County.	
☐ <u>Drainage areas</u> - includes offsite and onsite areas, exist Include drainage divides and directional labels for all subare (in acres), weighted runoff coefficient or curve number and subarea.	eas at points of interest and size
☐ <u>Critical erosion areas</u> — these areas require special cons sediment control measures. Refer to the VESCH for criteria.	·
☐ <u>Site development</u> - All improvements such as buildings, construction, above and below ground utilities, stormwa facilities, trails or sidewalks, proposed vegetation and lands physical items that could affect or be affected by erosion, see	iter management and drainage caping, amenities, etc. Show all
Adequate conveyances — Ensure that stormwater conversand adequate erosion resistance have been for provision stormwater runoff. Off-site channels that receive runoff receiving runoff from stormwater management facilities, volumes of sheet flows must be diverted to a stable outlet, system, or a stormwater management facility.	rided all on-site concentrated from the site, including those must be adequate. Increased
☐ <u>Location of practices</u> - The locations of erosion and se management practices used on the site. Use the standar Chapter 3 of the VESCH.	
☐ <u>Temporary stockpile areas</u> – Includes staging and equip for onsite or offsite construction activities, or indicate the project.	
☐ <u>Direction of flow for conveyances</u> - Indicate the direction conveyances (storm drains, stormwater conveyance channe	
☐ <u>Maintenance</u> - A schedule of regular inspections, maintenance erosion and sediment control structures and permanent stockshould be set forth.	
☐ <u>Storm drain profiles</u> - Provide profiles of all storm drains of pipe (RCP, CMP, HDPE, etc.) is not called out on the prof pipe material that may be specified for the project material that may be specified for the project materials.	iles, then the most conservative
SWM Application Form & Checklist Page 5 of 17 Project Name: Tax / Parcel No(s):	SWPPP Dated: Plans Dated: Submittal Number:

☐ <u>Detail drawings</u> - Any structural practices used that approved annual agency specifications should be descridrawings.	
$\hfill\Box$ Trench dewatering — includes methods and erosion and for the project.	d sediment control if anticipated
☐ Construction sequence — outlines the anticipated sequence and sediment controls and site grading and utility work to the site contractor.	
\square Phasing plan – required for larger project sites that approximately phases.	re to be developed in stages or
☐ <u>Professional seal and signature</u> — as required by the complete approved plans, drawings, technical reports, and s	·
NARRATIVE	
$\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $	• •
$\hfill\Box$ Existing site conditions - A description of the existing cover, and drainage (on-site and receiving channels).	topography (% slopes), ground
☐ <u>Adjacent areas</u> - A description of all neighboring areas so agricultural areas, streams, lakes, roads, etc., that m disturbance.	•
☐ Off-site areas - Describe any off-site land-disturbing actives, disposal areas, easements, etc.). Identify the Own locality responsible for plan review. Include a statement activity associated with the project must have an documentation of the approved ESC Plan for each of these statements.	ner of the off-site area and the that any off-site land-disturbing approved ESC Plan. Submit
\square <u>Soils</u> - Provide a description of the soils on the site, givin mapping unit, ability to erode, permeability, surface runoff,	•
SWM Application Form & Checklist Page 6 of 17 Project Name: Tax / Parcel No(s):	SWPPP Dated: Plans Dated: Submittal Number:

texture and soil structure. Show the site location on the Include a plan showing the boundaries of each soil type on t	• •
☐ <u>Critical areas</u> - A description of areas on the site that I problems or that are sensitive to sediment impacts (st weather / underground springs, etc.).	•
☐ <u>Erosion and sediment control measures</u> - A description methods that will be used to control erosion and sedim should satisfy applicable minimum standards and specifical Virginia Erosion and Sediment Control Handbook (VESCH).	entation on the site. Controls
\square Management strategies / Sequence of construction - A the sequence of construction, and any phasing of installation	
☐ <u>Stabilization measures</u> - A brief description, including sp be stabilized after construction is completed, including ten and mulching, paving, stone, soil stabilization blankets, and or special stabilization techniques to be used at the site.	nporary and permanent seeding
☐ <u>Maintenance of ESC measures</u> - A schedule of regular repair of erosion and sediment control structures should be	•
\Box <u>Calculations for temporary erosion and sediment control</u> ESC measure, provide the calculations required by the stand	
 Specifications for erosion and sediment control measure sediment control measure employed in the plan, include sections from the standard and specification in the VESCH: Construction Specifications Installation Maintenance Any approved variances or revisions to the standard 	in the Narrative the following
☐ Temporary sediment basin design data sheet — submits schematic or sketch cross section showing applicable design volumes (wet-dry), dimensions, and elevations. Peak design 2- or 25-year design storm event based on maximum distinterim, or proposed conditions).	n and construction data, storage n runoff should be based on the
SWM Application Form & Checklist Page 7 of 17 Project Name: Tax / Parcel No(s):	SWPPP Dated: Plans Dated: Submittal Number:

MINIMUM STANDARDS (must be on plan sheets)

☐ MS-1 : Has temporary stabilization been addressed for and permanent stabilization been addressed for any perionarrative?	, ,
☐ MS-2 : Has stabilization of soil stockpiles, borrow are addressed in the narrative and on the plan?	eas, and disposal areas been
☐ MS-3: Has the establishment and maintenance of perr been addressed?	manent vegetative stabilization
☐ MS-4 : Does the plan specifically state that sedime constructed as a first step in land-disturbing activities?	ent-trapping facilities shall be
\square MS-5: Does the plan specifically state that stabilization of immediately after installation? Is this noted for each measure	•
☐ MS-6 : Are sediment traps and sediment basins specified the standard and specification?	where needed and designed to
☐ MS-7: Have the design and temporary/permanent stabiliz adequately addressed? Is surface roughening provided for sl	•
☐ MS-8 : Have adequate temporary or permanent conveys slope drains) been provided for concentrated stormwater rule	"
☐ MS-9: Has water seeping from a slope face been addresse	ed (e.g., subsurface drains)?
☐ MS-10: Is adequate inlet protection provided for all oper inlets?	rational storm drain and culvert
☐ MS-11 : Are adequate outlet protection and/or cha stormwater conveyance channels and receiving channels? Is	• '
 Dimensions of the outlet protection? Lining? Siz Cross section and slope of the channels? Type of 	• •
☐ MS-12: Are in-stream protection measures required minimized?	so that channel impacts are
☐ MS-13: Are temporary stream crossings of non-erod applicable?	lible material required where
SWM Application Form & Checklist Page 8 of 17 Project Name: Tax / Parcel No(s):	SWPPP Dated: Plans Dated: Submittal Number:

☐ MS-14 : Are all applicable federal, state and local regulat crossing live watercourses being followed?	ions pertaining to working in or
☐ MS-15: Has immediate re-stabilization of areas subject and banks) been adequately addressed?	to in-stream construction (bed
☐ MS-16 : Have disturbances from underground utility line in	nstallations been addressed?
 No more than 500 linear feet of trench open at o Excavation material placed on the uphill side prohibited by safety standard requirements)? Effluent from dewatering filtered or passed device? Proper backfill, compaction, and restabilization? 	le of trenches (except where
☐ MS-17: Is the transport of soil and mud onto public road Construction Entrances, wash racks, transport of sediment t roadways at the end of each day, no washing before sweeping	o a trapping facility, cleaning of
☐ MS-18: Has the removal of temporary practices been add	dressed?
Have the removal of accumulated sediment and resulting disturbed areas been addressed?	the final stabilization of the
☐ MS-19: Are properties and waterways downstream protected from sediment deposition, erosion, and damag velocity and peak flow rate of stormwater runoff? Have ad on-site?	e due to increases in volume,
 a) Concentrated stormwater runoff leaving a development into an adequate natural or man-made receiving channels for those sites where runoff is discharged into a pipe stability analyses at the outfall of the pipe or pipe system. b) Adequacy of all channels and pipes shall be verified in the i) The applicant shall demonstrate that the total draina within the channel is one hundred times greater than of the project in question; or (1) Natural channels shall be analyzed by the use of stormwater will not overtop channel banks nor or banks. 	el, pipe or storm sewer system. e or pipe system, downstream n shall be performed. e following manner: age area to the point of analysis n the contributing drainage area a two-year storm to verify that
SWM Application Form & Checklist Page 9 of 17 Project Name: Tax / Parcel No(s):	SWPPP Dated: Plans Dated: Submittal Number:

- (2) All previously constructed man-made channels shall be analyzed by the use of a ten-year storm to verify that stormwater will not overtop its banks and by the use of a two-year storm to demonstrate that stormwater will not cause erosion of channel bed or banks; and
- (3) Pipes and storm sewer systems shall be analyzed by the use of a ten-year storm to verify that stormwater will be contained within the pipe or system.
- ii) If existing natural receiving channels or previously constructed man-made channels or pipes are not adequate, the applicant shall:
 - (1) Improve the channels to a condition where a ten-year storm will not overtop the banks and a two-year storm will not cause erosion to channel the bed or banks; or
 - (2) Improve the pipe or pipe system to a condition where the ten-year storm is contained within the appurtenances;
 - (3) Develop a site design that will not cause the pre-development peak runoff rate from a two-year storm to increase when runoff outfalls into a natural channel or will not cause the pre-development peak runoff rate from a ten-year storm to increase when runoff outfalls into a man-made channel; or
 - (4) Provide a combination of channel improvement, stormwater detention or other measures which is satisfactory to the VESCP authority to prevent downstream erosion.
- c) The applicant shall provide evidence of permission to make the improvements.
- d) All hydrologic analyses shall be based on the existing watershed characteristics and the ultimate development condition of the subject project.
- e) If the applicant chooses an option that includes stormwater detention, he shall obtain approval from the VESCP of a plan for maintenance of the detention facilities. The plan shall set forth the maintenance requirements of the facility and the person responsible for performing the maintenance.
- f) Outfall from a detention facility shall be discharged to a receiving channel, and energy dissipaters shall be placed at the outfall of all detention facilities as necessary to provide a stabilized transition from the facility to the receiving channel.
- g) All on-site channels must be verified to be adequate.
- h) Increased volumes of sheet flows that may cause erosion or sedimentation on adjacent property shall be diverted to a stable outlet, adequate channel, pipe or pipe system, or to a detention facility.
- i) In applying these stormwater management criteria, individual lots or parcels in a residential, commercial or industrial development shall not be considered to be separate development projects. Instead, the development, as a whole, shall be considered to be a single development project. Hydrologic parameters that reflect the ultimate development condition shall be used in all engineering calculations.

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- j) All measures used to protect properties and waterways shall be employed in a manner which minimizes impacts on the physical, chemical and biological integrity of rivers, streams and other waters of the state.
- k) Any plan approved prior to July 1, 2014, that provides for stormwater management that addresses any flow rate capacity and velocity requirements for natural or man-made channels shall satisfy the flow rate capacity and velocity requirements for natural or man-made channels if the practices are designed to:
 - i) Detain the water quality volume and to release it over 48 hours;
 - ii) Detain and release over a 24-hour period the expected rainfall resulting from the one year, 24-hour storm; and
 - iii) Reduce the allowable peak flow rate resulting from the 1.5, 2, and 10-year, 24-hour storms to a level that is less than or equal to the peak flow rate from the site assuming it was in a good forested condition, achieved through multiplication of the forested peak flow rate by a reduction factor that is equal to the runoff volume from the site when it was in a good forested condition divided by the runoff volume from the site in its proposed condition, and shall be exempt from any flow rate capacity and velocity requirements for natural or man-made channels as defined in any regulations promulgated pursuant to § 62.1-44.15:54 or 62.1-44.15:65 of the act.
- I) For plans approved on and after July 1, 2014, the flow rate capacity and velocity requirements of § 62.1-44.15:51 for the act and this subsection shall be satisfied by compliance with water quantity requirements in the Stormwater Management Act (§ 62.1-44.15:24 et seq. of the Code of Virginia) and attendant regulations, unless such land-disturbing activities are in accordance with 9VAC25-870-48 of the Virginia Stormwater Management Program (VSMP) permit regulations.
- m) Compliance with the water quantity minimum standards set out in 9VAC25-870-66 of the Virginia Stormwater Management Program (VSMP) permit regulations shall be deemed to satisfy the requirements of minimum standard 19.

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Section 2: Stormwater Management

GENERAL

SWM Application Form & Checklist Page 12 of 17 Project Name: Tax / Parcel No(s):	SWPPP Dated: Plans Dated: Submittal Number:
\square <u>Drainage Area Map</u> : The map should be a maximum scale following:	of 1" = 200' scale and include the
 Title sheet Date Project identification Owner and preparer information Table of contents Narrative description of methodology and design of st Summary tables showing compliance with the regulat Calculations (detailed below) 	_
☐ <u>Format</u> : The report should be bound in 8 ½ x 11 inch size for recommends using the available comprehensive <u>SWPPP tempreport</u> . Report shall generally include:	
☐ <u>Sequence of Construction</u> : Modification plan(s), including provided for temporary sediment control structures which wis SWM/BMP structures. Modifications of temporary sediment infiltration, and filtering system facilities is discouraged. REPORT	ill be converted to permanent
\square <u>FEMA FIRM Panel</u> : Reference designated special flood hazassociated with the site, as applicable.	zard areas or zone designations
\square SWM Maintenance Agreement: An agreement is required with Campbell County for each proposed BMP for the project	
\square Exception Request: If necessary, request in writing to the Nany requirements of the stormwater ordinance deemed inapproximation that review case only. Exceptions, which are approximation documented in the plan and become part of the approxed stothe site.	propriate based on site conditions oved, shall be properly
\Box <u>Certification</u> : Professional Seal and Signature required on stormwater management plans, drawings, technical reports, the VSMP Authority.	

- Drainage area boundaries, including delineation of forest/open space, managed turf, and impervious surface(s), for pre- and post-development conditions;
- o Time of concentration (Tc) flow paths for pre- and post-development conditions; and
- Information tables for each drainage and sub-drainage areas shown on the map to include the following:
 - Δ Total area;
 - Δ Area of forest/open space, managed turf, and impervious surface(s);
 - Δ Runoff coefficient or curve number; and
 - Δ Time of concentration.

\square <u>Soils Map</u> : The map should include soil symbols, hydrologic soil group, boundaries, and
legend in accordance with the current Soil Survey of Campbell County, Virginia with
approximate locations of the project site, BMPs, and applicable drainage basins.

□ Calculations

- Conveyance Systems
 - Δ Storm sewer design computations based on 10-year design event.
 - Δ Hydraulic grade line computations based on 10-year design event.
 - Δ Inlet computations based on current VDOT procedures for spread, ponding depth and grate size required.
 - Δ Culvert headwater computations. Design based on 10-year design storm event, or as otherwise required by VDOT, and check only for 100-year storm event.
 - Δ Open channel computations as required.
 - Δ Outlet protection or special energy dissipaters.
- Water Quality Control
 - Δ Runoff curve number or coefficient determinations pre-developed, post-developed, and ultimate development (as applicable) land use scenarios.
 - Δ Runoff reduction method spreadsheet to show water quality compliance.
- Water Quantity Control
 - Δ Hydrologic Computations
 - The Soil Conservation Service (SCS) based methodology is preferred for the design of stormwater management/BMP facilities with watersheds. If a site is less than 200 acres, modified rational method or rational method may be used at the discretion of the VSMP Authority.
 - *Use the modified runoff curve number as provided by the runoff reduction spreadsheet for each drainage area.*

spreadsheet for each dra			
SWM Application Form & Checklist Project Name: Tax / Parcel No(s):	Page 13 of 17	SWPPP Dated: Plans Dated: Submittal Number:	<u> </u>

- Time of concentration: Pre-developed, post-developed, and ultimate development (as applicable) indicating overland, shallow concentrated, and channel flow components (200 ft. maximum length for overland flow).
- Hydrographs: Provide graphical and/or tabular information for pre- and postdevelopment conditions for the 1-, 2-, 10-, and 100-year design storm events.

Δ Hydraulic Computations

- 1-, 2-, 10-, and 100-year design storm events.
- Elevation- or stage-storage curve and/or tabular data.
- Emergency spillway capacity and depth of flow.
- Elevation discharge (outlet rating) curve and/or table. Provide all supporting calculations and/or design assumptions.
- Miscellaneous Computations
 - Anti-seep collar design (concrete preferred) or match material type.
 - Riser/base structure floatation analyses. FS = 1.25 minimum.

PLANS

☐ General

- o Plan View at 1" = 50' scale or less (1" = 30', 1" = 40', etc.)
- o North arrow and plan legend
- o Property lines
- Adjacent property information
- Existing site features and existing impervious cover areas
- Forest/open space, managed turf, and impervious cover tabulations
- Existing drainage facilities (natural or manmade)
- Existing environmentally sensitive areas (RPS, wetlands, floodplain, steep slopes, critical soils, buffers, etc.)
- Existing and proposed contours (1' or 2' contour interval) and spot elevations as necessary to define high and low topographic information
- Existing and proposed easement locations
- o Proposed site improvements and proposed impervious cover areas
- o Proposed landscaping and seeding plans (disturbed areas, pond interior, etc.)
- o Proposed slope stabilization areas (riprap, blankets, mattings, walls, etc.)
- o Delineation of ponding, headwater, surcharge, or backwater areas which may affect adjacent existing or proposed buildings, structures, or upstream adjacent properties.
- Test boring locations with reference surface elevations (if known)
- Existing and proposed site utilities and protection measures
- o Erosion and sediment control measures (for site and BMP)
- o Maintenance or access corridors to permanent stormwater BMPs or drainage facilities

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☐ <u>Stormwater Conveyance Systems</u>

- o Plan views
 - Δ Storm drain lengths, sizes, types, classes and slopes for all segments. Label directly on plan or use a structure/pipe schedule.
 - Δ Structure (inlets, manholes, junctions, end sections, etc.) information shall be provided for each structure and include, but not limited to, a unique identifier, rim elevation, pipe inverts and sizes, type, and required grate type or top unit and lengths labeled.
 - Δ Adequate horizontal clearance from other site utilities or structures.
- Profiles are generally not required but are encouraged to expedite review. If not provided, ensure all pipe segments have adequate minimum cover, do not exceed maximum depths of cover for the type/class of pipe specified and do not conflict with other site utilities or excavation areas.
- o Details
 - Δ Typical storm drain bedding details or reference note.
 - Δ Typical pipe and/or underdrain details or reference note.
 - Δ Standard details or reference note for all purposed access structure types (inlets, manholes, junctions, etc.).
 - Δ Inlet shaping detail or applicable reference note.
 - Δ Step detail or applicable reference note (if depth of 4 feet or more).
 - Δ Typical open channel details with designation, location, shape, type, bottom width, top width, lining, slope, length, side slope, and installation depth required for construction. Channel design data as necessary may also be included.
 - Δ Outlet protection at all pipe outfalls.

☐ Stormwater Management Facilities (Best Management Practices – BMPs)

- o Plan views
 - Δ Location and dimensions of proposed stormwater conveyance systems and BMPs with appropriate labeled construction data and information.
 - Δ Location and dimensions of pretreatment devices, as required by the BMP Clearinghouse specifications for the selected county BMP facility type.
 - Δ Delineation of permanent pool(s) and 1-, 2-, 10-, and 100-year design water surface elevations.
 - Δ Emergency spillway level and outlet channel section
- Details: Provide cross-section and details, as suggested in the VA DEQ Stormwater
 Design Specification provided on the <u>Virginia BMP Clearinghouse</u> website.
- Notes: Provide notes, as suggested in the VA DEQ Stormwater Design Specification provided on the <u>Virginia BMP Clearinghouse</u> website, including the following:

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- Δ BMP landscaping (deep, shallow, fringe, perimeter, etc.)
- Δ Maintenance provisions for each proposed BMP
 - Entity responsible for maintenance identified.
 - Long-term schedule for inspection/maintenance of the facility and forebay(s), as applicable.
 - Access from public right-of-way or publicly traveled road.
 - Easement provided encompassing high water pool and buffer, principal and emergency spillways, outlet structures, forebays, embankment area, and possible sediment removal stockpile areas.

☐ Construction Specifications and General Notes

- Provisions to control base stream or storm flow conditions encountered during construction.
- Site and subgrade preparation requirements.
- o Embankment, fill, and backfill material soil and placement (lift) thickness requirements.
- Compaction and soil moisture content requirements.
- Geosynthetics for drainage, filtration, moisture barrier, separation, and reinforcement purposes.
- o Storm drain, underdrain, and pipe conduit requirements.
- o Minimum depth of pipe cover for temporary construction and final cover conditions.
- Concrete requirements for structural components.
- Riprap and slope protection.
- Access or maintenance road surface, base, subbase.
- o Temporary and permanent stabilization measures.
- o Temporary or permanent safety fencing.
- Dust and traffic control (if warranted).
- o Construction monitoring and certification by a certified project inspector for SWM.

GEOTECHNICAL REQUIREMENTS

\square Geotechnical report with recommendations specific to BMP facility type selected as required
by the BMP clearinghouse. Report prepared by a registered professional engineer, as required
by the VSMP Authority. Requires submission, review, and approval prior to issuance of VSMP
Permit.

ADDITIONAL COMMENTS OR INFORMATION SPECIFIC TO THE PLAN

ADDITIONAL COMMENTS ON INFORM	VI/XII O V 31 E GII 10 10 111	
CM/MA Appalianting Forms Q. Chaplalint	D 47 of 47	CWDDD Data da
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APPENDIX H

Completeness Review Form

Completeness Review Form

On behalf of Campbell County, this is a required notification that the information provided by [Applicant] on [Date] on behalf of [Owner/Developer] for the project known as [Project Name] located at [Address] or [Tax Map / Parcel Number(s)] appears to include the required elements for erosion and sediment control and stormwater management submittal for review. Official review and/or approval of the initial submittal will be provided to the Applicant and Owner within 60 calendar days and subsequent submittals within 45 days of the date of the letter.

[Nam	ne of Authority Representative]	Response Date
[Title	of Authority Representative]	
	INFORMATION SUBMITTE	D
	Proof of VSMP General Permit Registration Statemen	t completion, as required.
	Payment of VSMP Permit Fee (Department portion),	as required.
	Payment of VSMP Authority Permit Fee	
	Certified and completed Erosion and Sediment Contr Application Form and Checklist	ol and Stormwater Management
	Erosion and Sediment Control Plan(s) (Plans, Details,	etc.)
	Stormwater Management Design Plan(s) (Plans, Profi	les, Details, etc.)
	Stormwater Pollution Prevention Plan (SWPPP), inclu Report, Pollution Prevention Plan, and Stormwater M calculations.	•
	Other Local, State and Federal Agency Requirements	
within	ans not approved by the Administrator, all comments on 180 calendar days. Plans that are not resubmitted wit ew application fee.	
-	t Name:ap / Parcel No(s):	SWPPP Dated: Plans Dated: Submittal Number:

APPENDIX I

Comprehensive Stormwater Pollution Prevention Plan (SWPPP) Template

SWPPP Template

Instructions

To help you develop the narrative section for VSMP permit and construction site SWPPP, Campbell County has created this electronic comprehensive SWPPP template, which includes the requirements erosion and sediment control, stormwater management, and pollution prevention plans. The template is designed to help guide you through the development process and help ensure that your SWPPP addresses all the necessary elements stated in your construction general permit. For further guidance on developing your SWPPP, you may want to visit the EPA's website at www.epa.gov/npdes/swpppguide.

This template covers the SWPPP elements that most construction general permits require. However, there are two major reasons to customize this template:

- 1. To reflect the terms and conditions of your construction general permit and
- 2. To reflect the conditions at your site.

Tips for completing the SWPPP template

- Sections 1, 2, 3, and 4 of the Comprehensive SWPPP are required for the plan review submittal, as noted below. Sections 5, 6, and 7 of the Comprehensive SWPPP are not required to be completed at time of plan review submittal. However, these sections must be completed by the Applicant and/or the Contractor prior to construction. The Comprehensive SWPPP must be available at the construction site at all times during construction.
- The erosion and sediment control (Section 2) and stormwater management (Section 3) sections of the SWPPP shall be appropriately sealed and signed by a professional engineer, architect, surveyor, or landscape architect registered in the Commonwealth of Virginia pursuant to Article 1 (§ 54.1-400 et seq.) of Chapter 4 of Title 54.1 of the Code of Virginia, as required by the VSMP Authority.
- Multiple operators may share the same SWPPP, but make sure that responsibilities are clearly described.
- Modify this SWPPP template so that it addresses the requirements in your construction general permit and meets the needs of your project. Consider adding permit citations in the SWPPP when you address a specific permit requirement.

SWPPP Template i

Revision Date: June 13, 2014

Stormwater Pollution Prevention Plan

For:

Insert Project Name
Insert Project Site Location/Address
Insert City, State, Zip Code
Insert Project Site Telephone Number (if applicable)

Operator(s):

Insert Company or Organization Name
Insert Name
Insert Address
Insert City, State, Zip Code
Insert Telephone Number

Stormwater Manager:

Insert Name

SWPPP Contact(s):

Insert Name Insert Name Insert Name

SWPPP Preparation Date:

<u>mm</u> / <u>dd</u> / <u>yyyy</u>

Estimated Project Dates:

Start of Construction: mm / dd / yyyy
Completion of Construction: mm / dd / yyyy

SWPPP Template ii

Revision Date: June 13, 2014

CERTIFICATION AND NOTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name:	litle:	
Signature:	Date:	

SWPPP Template iii

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SECTION 1: SITE INFORMATION

1.1 Project/Site Information

 Project/Site Name: 	Insert Project Name	
2. Project Street/Location:	Insert Project Location	<u>on</u>
3. City/Town: <u>Insert City</u>	4. State: Insert State	5. Zip Code: Insert Zip Code
6. County: <u>Insert County</u>		
7. Subdivision: <u>Insert Subdivisio</u>	<u>ın</u>	
8. Tax Reference Number of Pa	rcel(s): <u>Insert Data</u>	
9. Parcel Number(s):	Insert Data	
<u>Latitude/Longitude</u>		
10. Latitude:	Longit	cude:
dd º mm ' ss " N (degrees, mini seconds)	utes, seconds)	dd º mm ' ss " W (degrees, minutes,
or Link to e-permitting site		
11. Method for determining latit	ude/longitude:	
USGS topographic map (s	pecify scale: <u>Insert Scale</u>)	☐ EPA Web site ☐ GPS
Other (please specify): Ins	ert Other Method(s)	
12. Is this project considered a fe	ederal facility?	☐ Yes ☐ No
13. VSMP permit number: <u>Insert</u>	Permit Number	
-	ying number assigned to your under the construction gener	project by your permitting authority after you al permit.)
14. Type of regional facility/facili	ties to which site contrib	utes: <u>Insert Type of Facility</u>
15. Regional Facility Street/Locat	ion: <u>Insert Facility Location</u>	<u>on</u>
16. City: <u>Insert City</u>	17. State: <u>Insert State</u>	18. Zip Code: Insert Zip Code
SWPPP	Page 1 of 32	SWPPP Dated:
Project Name:		
Tax / Parcel No(s):		Submittal Number:

1.2 Contact Information/Responsible Parties

1. Operator(s): Insert Company or Organization Name Insert Name **Insert Address** Insert City, State, Zip Code Insert Telephone Number Insert Fax/Email Insert area of control (if more than one operator at site) Repeat as necessary 2. Project Manager(s) or Site Supervisor(s): Insert Name Insert Company or Organization Name **Insert Address** Insert City, State, Zip Code Insert Telephone Number Insert Fax/Email Insert area of control (if more than one operator at site) Repeat as necessary 3. Stormwater Manager and SWPPP Contact(s): Insert Name Insert Company or Organization Name Insert Address Insert City, State, Zip Code Insert Telephone Number Insert Fax/Email (Optional) Repeat as necessary

SWPPP	Page 2 of 32	SWPPP Dated:
Project Name:		Plans Dated:
Tax / Parcel No(s):		Submittal Number:

4. This SWPPP Was Prepared By: Insert Name Insert Company or Organization Name **Insert Address** Insert City, State, Zip Code Insert Telephone Number Insert Fax/Email 5. Subcontractor(s): Insert Company or Organization Name Insert Name **Insert Address** Insert City, State, Zip Code Insert Telephone Number Insert Fax/Email Repeat as necessary 6. Responsible Land Disturber: **Insert Name** Insert DEQ Certification Number Insert Address Insert City, State, Zip Code Insert Telephone Number Insert Fax/Email Repeat as necessary 7. Emergency 24 hour contact: Insert Name Insert Telephone Number

SWPPP	Page 3 of 32	SWPPP Dated:
Project Name:		Plans Dated:
Tax / Parcel No(s):		Submittal Number:

1.3 Nature and Sequence of Construction Activity

1.	Describe the general s	cope of the work for th	e project, major p	phases of construction, etc.:
	INSERT TEXT HERE			
2.	What is the function o	f the construction activ	vity?	
	Residential	Commercial	Industrial	Road Construction
	Linear Utility			
	Other (please speci	fy): <u>INSERT TEXT HERE</u>		
3.	Estimated Project Star	t Date:	<u>mm / dd / yyyy</u>	<u>(</u>
4.	Estimated Project Con	npletion Date:	<u>mm</u> / <u>dd</u> / <u>yyyy</u>	
_				
1.4	4 Construction Si	te Estimates & Stati	stics	
The	e following are estimate	es of the construction s	ite:	
1.	Construction Site Area	to be disturbed		acres
2.	Total Project Area			acres
3.	Percentage impervious area before construction %			%
4.	Runoff coefficient before construction Refer to Sect 4.1 & 4.2			Refer to Sect 4.1 & 4.2
5.	. Percentage impervious area after construction %			%
6.	. Runoff coefficient after construction Refer to Sect 4.1 & 4.2			Refer to Sect 4.1 & 4.2
7.	Number of Acres treat	ed by Regional Facility		acres
	Fullation Consults			
1.5	5 Existing Condit	ions		
1.	Soil type(s): Refer to S	Section 2.5.		
2.	Slopes (describe curre to Section 2.6.	nt slopes and note any	changes due to g	rading or fill activities): Refer
3.	Drainage Patterns: Re	fer to Section 4.1. or p	rovide if Section 4	.1 is not required.
4.	Vegetation:			
	INSERT TEXT HERE			
	INSERT TEXT HERE			
5.	Other:			
SW	'PPP	Page 4	of 32	SWPPP Dated:
	ject Name:			Plans Dated:
Tax	<pre>< / Parcel No(s):</pre>			Submittal Number:

- INSERT TEXT HERE
- INSERT TEXT HERE

1.6 Receiving Waters

1. Description of receiving waters, include HUC Code for each: INSERT TEXT HERE

2. Description of storm sewer systems: INSERT TEXT HERE

3. Description of waters subject to TMDLs:

Waters subject to TMDLs	Type of Impairment	Cause of Impairment
INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE
INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE
INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE
INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE

4.	Provide link to in	npaired water	referenced from	Virginia's TM	DL website:
----	--------------------	---------------	-----------------	---------------	-------------

INSERT TEXT HERE

5. Describe the designated uses of the water body: INSERT TEXT HERE

6. Please include a description and map of the watershed boundary: INSERT TEXT HERE

7. Please list any measures that will be used to meet the TMDL(s): INSERT TEXT HERE

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Tax / Parcel No(s):		Submittal Number:

8. Description of impaired waters:

Impaired Waters	Pollutant	Project Specific Control Measures
INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE
INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE
INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE
INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE

1.7 Site Features and Sensitive Areas to be Protected

Description of unique features and measures to protect them:

• INSERT TEXT HERE

1.8 Potential Sources of Pollution

[These pollutants must be addressed in the pollution prevention plan.]

Potentials sources of sediment to stormwater runoff:

- INSERT TEXT HERE
- INSERT TEXT HERE

Potential pollutants and sources, other than sediment, to stormwater runoff:

- INSERT TEXT HERE
- INSERT TEXT HERE

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Project Name:		Plans Dated:
Tax / Parcel No(s):		Submittal Number:

SECTION 2: EROSION AND SEDIMENT CONTROL

2.1 Project Description

1. General Description: Refer to Section 1.3.

2. Schedule: Refer to Section 1.3.

3. Site Data: Refer to Section 1.4.

2.2 Existing Site Conditions: Refer to Sections 1.5, 2.5, 2.6, and 4.1.

2.3 Adjacent Property

[Detailed description of adjacent properties including location]

2.4 Planned Earthwork Activities

- 1. General Earthwork: [General earthwork description]
- 2. Off-site Disposal: Any excess or unsuitable material will be transported to off-site disposal areas with erosion control plans that are approved by the authority having jurisdiction. The names of any offsite areas must be provided to the [jurisdiction] before any soil is transported offsite. The depths of topsoil/surficial soil in existing open areas range from approximately [depth] inches.
- 3. Trenching: Trenching will be performed to install the utilities.
- 4. Imported Material: Any imported material required for backfilling, stone bases, etc., is planned to be obtained from commercial regional quarries. All off-site land disturbing areas in which material is obtained or is disposed shall have an approved ESC plan.

2.5 Soils

[Add soils description and map and/or reference to soils information in appendices. Refer to http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm]

2.6 Critical Erosion Areas

Critical erosion areas may be encountered during grading operations as follows:

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Project Name:		Plans Dated:
Tax / Parcel No(s):		Submittal Number:

- 1. Proposed slopes near 3:1 or greater.
- 2. Drainage swales where surface runoff will be concentrated.

The proposed erosion and sediment control measures are intended to minimize any potential problems and promote stabilization.

[List any known critical erosion areas]

2.7 Erosion and Sediment Control Measures

All vegetative and structural erosion and sediment control practices will be constructed and maintained in accordance with the minimum standards and specifications of the "Virginia Erosion and Sediment Control Handbook" (VESCH), latest edition, as provided in the Appendix.

[Describe the areas that will be disturbed with each phase of construction and the methods (signs, fences, etc.) that you will use to protect those areas that should not be disturbed. Describe natural features identified earlier and how each will be protected during construction activity. Also describe how topsoil will be preserved. Provide a map showing the following information:

- a. Areas and timing of soil disturbance and areas that will not be disturbed
- b. Natural features to be preserved
- c. Locations of major structural and non-structural BMPs identified in the SWPPP
- d. Locations and timing of stabilization measures
- e. Locations of off-site material, waste, borrow, or equipment storage areas
- f. Locations of all waters of the U.S., including wetlands
- g. Locations where stormwater discharges to a surface water
- h. Locations of storm drain inlets
- i. Areas where final stabilization has been accomplished]

2.8 Structural Practices

[EXAMPLES BELOW FOR COMMONLY USED PRACTICES; INSERT APPROPRIATE PROJECT-SPECIFIC PRACTICES AS NEEDED]

1. SAFETY FENCE – STD. & SPEC. 3.01

Safety fence shall be installed as shown on the plans to prohibit the undesirable use of an erosion control measure or land disturbing activity by the public.

Sequence of Installation:	Prior to any land disturbance
Maintenance:	Refer to Std. & Spec 3.01
Removal Event:	Following stabilization of site

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2. TEMPORARY STONE CONSTRUCTION ENTRANCE – STD. & SPEC. 3.02

Temporary stone construction entrance shall be installed as shown on the plans to reduce the amount of soil transported onto public roads or other paved areas.

Sequence of Installation: Prior to any land disturbance
Maintenance: Refer to Std. & Spec. 3.02
Removal Event: Immediately prior to paving

3. CONSTRUCTION ROAD STABILIZATION – STD. & SPEC. 3.03

Temporary stabilization with stone shall be installed as shown on the plans for access roads and other traffic areas immediately after grading to reduce erosion caused by vehicles during wet weather, and to prevent having to regrade permanent roadbeds between initial grading and final stabilization.

Sequence of Installation: Following establishment of subgrade elevation for

the access drive and drive aisles

Maintenance: Refer to Std. & Spec. 3.03

Removal Event: Prior to placing subbase and pavement

4. STRAW BALE BARRIER – STD. & SPEC. 3.04

Disturbed areas shall be lined with straw bale barriers in locations shown on the plans to detain sediment and decrease storm water runoff velocity

Sequence of Installation: Prior to any land disturbance Maintenance: Refer to Std. & Spec 3.04

Removal Event: Following permanent stabilization of upstream

areas

5. SILT FENCE - STD. & SPEC. 3.05

Disturbed areas and soil stockpile areas shall be lined with silt fence as shown on the plans to detain sediment and decrease storm water runoff velocity.

Sequence of Installation: Prior to any land disturbance Maintenance: Refer to Std. & Spec. 3.05

Removal Event: Following permanent stabilization of entire site

6. BRUSH BARRIER - STD. & SPEC. 3.06

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Disturbed areas shall be lined with brush barriers as shown on the plans to intercept and retain sediment on-site.

Sequence of Installation: Prior to any land disturbance Maintenance: Refer to Std. & Spec 3.06

Removal Event: Following permanent stabilization of upstream

areas

7. STORM DRAIN INLET PROTECTION - STD. & SPEC. 3.07

Storm drain inlet protection shall be placed at existing and proposed grate inlets to prevent sediment from entering the storm piping.

Sequence of Installation: Existing structures - prior to any land disturbance

Future structures – immediately following

installation

Maintenance: Refer to Std. & Spec. 3.07

Removal Event: Following permanent stabilization of all upland

areas

8. CULVERT INLET PROTECTION - STD. & SPEC. 3.08

Culvert inlet protection shall be installed and consist of a sediment filter located at the inlet to storm sewer culverts, which prevents sediment from entering, accumulating in and being transferred by the culvert. It provides erosion control at culverts during the phase of the project where elevations and drainage patterns are changing, causing original control measures to be ineffective.

Sequence of Installation: Existing structures - prior to any land disturbance

Future structures – immediately following

installation

Maintenance: Refer to Std. & Spec. 3.08

Removal Event: Following permanent stabilization of all upland

areas

9. TEMPORARY DIVERSION DIKE - STD. & SPEC. 3.09

Temporary diversion dikes shall be constructed to divert runoff from a disturbed area to a sediment-trapping facility.

Sequence of Installation: Concurrent with the construction of the sediment

traps

Maintenance: Refer to Std. & Spec. 3.09

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Removal Event: Following permanent stabilization of all upland

areas

10. TEMPORARY FILL DIVERSION - STD. & SPEC. 3.10

Temporary fill diversions shall be constructed as shown on the plans to divert runoff along the top of an active earth fill to an appropriate stabilized outlet.

Sequence of Installation: As needed at the end of each work day at the top of

active fill slopes.

Maintenance: Refer to Std. & Spec. 3.10

Removal Event: Following permanent stabilization of all upland

areas

11. TEMPORARY RIGHT-OF-WAY DIVERSION - STD. & SPEC. 3.11

Temporary right-of-way diversions shall be constructed within a sloping right-of-way to an appropriate stabilized outlet.

Sequence of Installation: Concurrent with right-of-way grading activities.

Maintenance: Refer to Std. & Spec. 3.11

Removal Event: Prior to placing subbase and pavement

12. DIVERSION - STD. & SPEC. 3.12

Diversions shall be constructed as shown on the plans in accordance with design calculations to divert runoff to a stabilized outlet.

Sequence of Installation: As part of grading activities Maintenance: Refer to Std. & Spec. 3.12

Removal Event: This is permanent and shall not be removed

13. TEMPORARY SEDIMENT TRAP – STD. & SPEC. 3.13

A temporary sediment trap shall be constructed as shown on the plans to detain sediment-laden runoff long enough for the majority of sediment to settle out.

Sequence of Installation: Prior to any site disturbance and grading activities

Maintenance: Refer to Std. & Spec. 3.13

Removal Event: Following permanent stabilization of upland areas

14. TEMPORARY SEDIMENT BASIN - STD. & SPEC. 3.14

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A temporary dam with a controlled stormwater release structure formed by constructing an embankment of compacted soil shall be constructed as shown on the plans at the base of a sloping disturbed area to detain sediment-laden runoff from disturbed areas in "wet" and "dry" storage long enough for the majority of the sediment to settle out. Stabilization is required immediately after installation.

Sequence of Installation: Prior to any site disturbance and grading activities

Maintenance: Refer to Std. & Spec. 3.14

Removal Event: Following permanent stabilization of entire site

15. TEMPORARY SLOPE DRAIN – STD. & SPEC. 3.15

Temporary slope drains shall be constructed as shown on the plans to temporarily conduct concentrated stormwater runoff safely down the face of a cut or fill slope without causing erosion on or below the slope.

Sequence of Installation: As part of grading activities Maintenance: Refer to Std. & Spec. 3.15

Removal Event: Following permanent stabilization of upland and

down slope areas.

16. PAVED FLUME - STD. & SPEC. 3.16

A permanent paved channel constructed to conduct stormwater runoff safely down the face of a slope without causing erosion problems on or below the slope.

Sequence of Installation: Concurrent with the construction of the sediment

traps

Maintenance: Refer to Std. & Spec. 3.16

Removal Event: This is permanent and shall not be removed.

17. STORMWATER CONVEYANCE CHANNEL (SCC) – STD. & SPEC. 3.17

Permanent SCCs are proposed to provide adequate channel to convey runoff, and shall be constructed in accordance with the plans, specifications, and engineering design calculations.

Sequence of Installation: As part of grading activities Maintenance: Refer to Std. & Spec. 3.17

Removal Event: This is permanent and shall not be removed.

18. OUTLET PROTECTION – STD. & SPEC. 3.18

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Structurally lined aprons or other acceptable energy dissipating devices placed at the outlets of pipes or paved channel sections, used to prevent scour at stormwater outlets, to protect the outlet structure and to minimize the potential for downstream erosion by reducing the velocity and energy of concentrated stormwater flows.

Sequence of Installation: Existing structures - prior to any land disturbance

Future structures – immediately following

installation

Maintenance: Refer to Std. & Spec. 3.18

Removal Event: This is permanent and shall not be removed.

19. RIPRAP – STD. & SPEC. 3.19

Large, loose, angular stone with filter fabric installed to protect soil from the erosive forces of concentrated runoff or stabilize slopes.

Sequence of Installation: As part of grading activities Maintenance: Refer to Std. & Spec. 3.19

Removal Event: This is permanent and shall not be removed.

20. ROCK CHECK DAMS – STD. & SPEC 3.20

Small temporary stone dams constructed across a swale or drainage ditch in order to reduce the velocity of concentrated stormwater flows, thereby reducing erosion of the swale or ditch and trap sediment from adjacent areas.

Sequence of Installation: As part of grading activities Maintenance: Refer to Std. & Spec. 3.20

Removal Event: Unless indicated as permanent, remove following

permanent stabilization of the site.

21. LEVEL SPREADER - STD. & SPEC 3.21

An outlet for diversions and dikes consisting of an excavated depression constructed at zero grade to convert concentrated runoff to sheet flow and release it uniformly onto areas stabilized by existing vegetation.

Sequence of Installation: As part of grading activities Maintenance: Refer to Std. & Spec. 3.21

Removal Event: This is permanent and shall not be removed.

22. STRUCTURAL STREAMBANK STABILIZATION – STD. & SPEC 3.23

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Structural streambank stabilization should be installed as shown and described on the plans to protect streambanks from the erosive forces of flowing water.

Sequence of Installation: As part of grading activities Maintenance: Refer to Std. & Spec. 3.23

Removal Event: This is permanent and shall not be removed.

23. TEMPORARY VEHICULAR STREAM CROSSING - STD. & SPEC 3.24

Temporary vehicular stream crossings must be installed whenever more than two (2) crossings (one-way) occur within six months.

Sequence of Installation: Prior to stream crossing Maintenance: Refer to Std. & Spec. 3.24

Removal Event: After construction is complete and the need to cross

the stream is eliminated.

24. UTILITY STREAM CROSSING - STD. & SPEC 3.25

Utility stream crossings should be constructed in accordance with Std. and Spec. 3.25 to help protect sediment from entering the stream during construction and minimize the amount of disturbance.

Sequence of Installation: As part of utility installation activities

Maintenance: Refer to Std. & Spec. 3.25
Removal Event: Following utility installation

25. DEWATERING STRUCTURE - STD. & SPEC. 3.26

A temporary settling and filtering device for water which is discharged from dewatering activities.

Sequence of Installation: As needed

Maintenance: Refer to Std. & Spec. 3.26

Removal Event: After all dewatering has taken place.

26. TURBIDITY CURTAIN – STD. & SPEC. 3.27

A floating geotextile material to minimize sediment transport from a disturbed area adjacent to or within a body of water.

Sequence of Installation: Prior to upstream land disturbance

Maintenance: Refer to Std. & Spec. 3.27

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Removal Event: Following permanent upstream stabilization

27. SUBSURFACE DRAIN – STD. & SPEC. 3.28

A perforated conduit such as pipe, tubing or tile installed beneath the ground to intercept and convey ground water.

Sequence of Installation: As needed with slope grading Maintenance: Refer to Std. & Spec. 3.28

Removal Event: This is permanent and shall not be removed

28. SURFACE ROUGHENING – STD. & SPEC. 3.29

Provide a rough surface with horizontal depressions created by operating a tillage or other suitable implement on the contour, or by leaving slopes in a roughened condition by not fine-grading them.

Sequence of Installation: As part of grading activities, prior to seeding

Maintenance: Refer to Std. & Spec. 3.29

Removal Event: Not Applicable

29. MS-16: UTILITY INSTALLATION

No more than 500 linear feet of utility trench may be opened at one time. Excavated material shall be placed on the uphill side of trenches. Effluent from dewatering operations shall be filtered or passed through approved sediment trapping device, or both, and discharged in a manner that does not adversely affect flowing streams or off-site property. Backfill material shall be properly compacted to minimize erosion and promote stabilization.

2.9 Vegetative Practices

GENERAL: A permanent vegetative cover shall be established on denuded areas not otherwise permanently stabilized by concrete or pavement. Permanent vegetation shall not be considered established until a ground cover is achieved that is uniform, mature enough to survive and will inhibit erosion. New vegetation shall be maintained for one full year after planting. New seeding shall be supplied with adequate moisture, especially late in the season, and in abnormally hot or dry weather. Stabilization practices shall be accomplished in accordance with the appropriate VESCH Std. & Spec. as provided in the Appendix, and the Erosion and Sediment Control Plan. Selection of the appropriate seed mixture for temporary seeding will depend upon the time of year it is applied.

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1. VEGETATIVE STREAMBANK STABILIZATION – STD. & SPEC. 3.22

Install vegetation to stabilize stream banks and protect from the erosive forces of flowing water where indicated on the plans.

Sequence of Installation: Following grading activities

Maintenance: Refer to Std. & Spec. 3.22; areas which fail to

establish vegetative cover adequate to prevent rill

erosion are to be reseeded.

Removal Event: This is a permanent practice, refer to Std. & Spec.

3.22 for information on required repairs and

vegetative establishment.

2. TOPSOILING – STD. & SPEC. 3.30

In order to stabilize final site grades, suitable, organic growth medium shall be used. This can be accomplished through on-site preservation of existing topsoil or imported topsoil.

Sequence of Installation: Following final grading/surface roughening where

applicable.

Maintenance: Refer to Std. & Spec. 3.30; areas which fail to

establish vegetative cover adequate to prevent rill

erosion are to be reseeded.

Removal Event: This is a permanent practice and shall not be

removed.

3. TEMPORARY SEEDING – STD. & SPEC. 3.31

Temporary seeding shall be applied over denuded areas within 7 days for areas that will not be brought to final grade within 30 days. Temporary seeding mixes shall be as described on the detail drawings.

Sequence of Installation: When cleared areas will not be brought to final

grade within 30 days

Maintenance: Refer to Std. & Spec. 3.31; areas which fail to

establish vegetative cover adequate to prevent rill

erosion are to be reseeded.

Removal Event: As needed for final grading.

4. PERMANENT SEEDING – STD. & SPEC. 3.32

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Permanent seeding shall also be used on all areas that are not at final grade and that will be left dormant for a period of more than 1 year. If conflicts exist between the project specifications and the VESCH Std. & Spec. 3.32, the more stringent requirement shall apply. Permanent seeding mixes and rates are found on sheet [XXX] Erosion and Sediment Control Details.

Sequence of Installation: Within 7 days of achieving final grade or as noted

above

Soil Testing Requirements: Refer to Std. & Spec. 3.32

Maintenance: Refer to Std. & Spec. 3.32; areas which fail to

establish vegetative cover adequate to prevent rill erosion are to be immediately reseeded, following identification of the cause of poor germination.

5. **SODDING – STD. & SPEC. 3.33**

Sod shall be installed where indicated on the plans in fine-graded areas to establish an immediate permanent turf cover.

Sequence of Installation: Following establishment of final grade

Maintenance: Refer to Std. & Spec. 3.33

Removal Event: This is a permanent practice and should not be

removed.

6. BERMUDAGRASS & ZOYSIAGRASS ESTABLISHMENT - STD. & SPEC. 3.34

Bermudagrass & Zoysiagrass shall be planted only where indicated on the plans using plugs, sprigs, or stolons to provide a vegetative ground cover more rapidly than traditional seeding methods.

Sequence of Installation: Within 7 days of achieving final grade or as noted

above

Soil Testing Requirements: Refer to Std. & Spec. 3.34 Maintenance: Refer to Std. & Spec. 3.34

7. MULCHING – STD. & SPEC. 3.35

Application of plant residues or other suitable material shall be installed to prevent erosion and foster growth of vegetation to areas which have been seeded or in areas which cannot be seeded because of season to provide some protection to the soil surface.

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Sequence of Installation: Following establishment of final grade and

placement of lime, fertilize, and seed or in areas which cannot be seeded because of the season

Maintenance: Refer to Std. & Spec. 3.35

Removal Event: not applicable unless used for temporary cover in

areas which cannot be seeded because of the

season

8. SOIL STABILIZATION BLANKETS AND MATTING - STD. & SPEC. 3.36

Blankets and matting shall be used to aid in controlling erosion on critical areas by providing a microclimate which protects young vegetation and promotes its establishment. In addition, some types of soil stabilization mats are also used to raise the maximum permissible velocity of turf grass stands in channelized areas by "reinforcing the turf" to resist the forces of erosion during storm events.

Sequence of Installation: Following establishment of final grade and

placement of lime, fertilize, and seed.

Maintenance: Refer to Std. & Spec. 3.36

Removal Event: This is permanent and shall not be removed.

9. TREES, SHRUBS, VINES, & GROUNDCOVERS – STD. & SPEC. 3.37

Trees, shrubs, vines, and groundcovers shall be planted as indicated on the plans in order to stabilize disturbed areas.

Sequence of Installation: Following establishment of final grade.

Maintenance: Refer to Std. & Spec. 3.37

Removal Event: This is permanent and shall not be removed.

10. TREE PRESERVATION AND PROTECTION - STD. & SPEC. 3.38

Desirable trees shall be protected from mechanical and other injury during land disturbing activity to ensure their survival.

Sequence of Installation: Prior to any site disturbance and grading activities

Maintenance: Refer to Std. & Spec. 3.38

Removal Event: Following permanent stabilization of entire site

11. DUST CONTROL – STD. & SPEC. 3.39

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During land disturbance, reduce surface and air movement of dust in areas subject to dust problems in order to prevent soil loss and reduce the presence of potentially harmful airborne substances.

Sequence of Installation: Immediately as needed to reduce surface and air

movement of dust in areas subject to dust problems

Maintenance: Refer to Std. & Spec. 3.39

Removal Event: N/A

2.10 Management Strategies

The Contractor will designate an employee certified as the "Responsible Land Disturber" (RLD), by the Commonwealth of Virginia, Department of Environmental Quality (VADEQ), who is in charge of and is responsible for carrying out the land-disturbing activities on this project. This employee shall also inspect for deficiencies immediately after each rainfall, at least daily during prolonged rainfall, and at least weekly when no rainfall occurs. Contractors shall provide written documentation to [Owner] that they meet this requirement prior to [Owner] awarding the construction contract, and [Owner] shall provide the name of the RLD to [Regulatory Authority] and VADEQ prior to land disturbance. In the interim until the work starts, [Interim RLD], [the licensed professional] is the RLD.

- As first step measures, the construction entrance, silt fence, diversions, temporary sediment traps, temporary sediment basins, and inlet/culvert protection shall be installed as indicated prior to upslope land disturbance. [Modify as appropriate for individual projects]
- 2. Stabilization measures shall be applied to earthen structures such as diversions immediately after installation. [Modify as appropriate for individual projects]
- 3. Inlet protection as indicated on the Plan shall be installed for new inlets as they become operational.
- 4. Stockpiling of soil [is/is not] planned.
- 5. Gravel stabilization shall be installed on the building pad area and paved areas as soon as the "final" subgrade elevation is obtained.
- 6. Permanent seeding will be used on all disturbed areas that are not scheduled to receive concrete surfacing, or landscaping (hardwood mulch, etc.).
- 7. Areas that are not to be disturbed shall be clearly marked by flags, signs, etc.

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8. All temporary erosion and sediment control measures shall be removed within 30 days after final site stabilization or after temporary measures are no longer needed, unless otherwise authorized by the local program authority. Trapped sediment and the disturbed soil areas resulting from the disposition of temporary measures shall be permanently stabilized to prevent further erosion and sedimentation.

2.11 Phased Construction Activities

[Describe the intended construction sequencing and timing of major activities, including grading activities, road and utility installation, and building phases. It may be useful to develop a separate, detailed site map for each phase of construction. Add phases as needed below.]

- Phase I
 - a. Describe phase
 - b. Duration of phase (start date, end date)
 - c. List BMPs associated with this phase
 - d. Describe stabilization methods for this phase (describe any temporary stabilization methods that will be used before final stabilization)
- 2. Phase 2
 - a. Describe phase
 - b. Duration of phase (start date, end date)
 - c. List BMPs associated with this phase
 - d. Describe stabilization methods for this phase (describe any temporary stabilization methods that will be used before final stabilization)
- 3. Phase 3
 - a. Describe phase
 - b. Duration of phase (start date, end date)
 - c. List BMPs associated with this phase
 - d. Describe stabilization methods for this phase (describe any temporary stabilization methods that will be used before final stabilization)
- 4. After the stabilization of the site is complete, all temporary erosion and sediment control devices will be removed.

2.12 Permanent Stabilization

All areas disturbed by construction shall be stabilized with permanent seeding, landscaping, pavement, or concrete following the final grading.

2.13 Maintenance

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- The contractor shall inspect all erosion control measures immediately after each run-off producing rainfall event, at least daily during prolonged rainfall, at least weekly when no rainfall occurs, and in accordance with the Virginia Stormwater Management Program (VSMP) Permit Regulations. The following areas will be checked in particular:
 - a. All devices used at entrances to the storm drain system shall be checked for their performance. If repairs need to be made, they shall be done in a responsible manner.
 - b. Sediment shall be removed when the sediment has accumulated to one half the design depth of the barrier. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
 - c. All vegetated areas shall be checked regularly to ensure that a good stand is maintained. Areas shall be fertilized and repaired by reseeding as necessary.
- 2. [Entity responsible for maintenance] personnel will be responsible for maintenance.

Required Certification

The submitted erosion and sediment control narrative (Section 2), including its referenced appendices, and attached plans are complete and meet all applicable requirements to the bes of my knowledge.			
Licensed Professional Signature / Se Applicant	eal or	Date	
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SECTION 3: POLLUTION PREVENTION PLAN

3.1 Equipment and Vehicle Washing

[Describe measures to minimize the discharge of pollutants from wash waters.]

3.2 Building Materials/Products, Construction Wastes, Landscape Materials, and/or Other Materials

[Describe construction materials expected to be stored on-site and procedures for storage of materials to minimize exposure of the materials to stormwater.]

3.3 Chemical Spill/Leak Prevention and Control Plan

[Describe the spill prevention and control plan to include ways to reduce the chance of spills, stop the source of spills, contain and clean up spills, dispose of materials contaminated by spills, and train personnel responsible for spill prevention and control.]

3.4 Washout Areas

[Describe location(s) and controls to minimize the potential for stormwater pollution from washout areas for concrete mixers, paint, stucco, etc.]

3.5 Equipment/Vehicle Fueling and Maintenance Practices

[Describe equipment/vehicle fueling and maintenance practices that will be implemented to control pollutants, including but not limited to, fuels, oils, soaps, and solvents, to stormwater (e.g., secondary containment, drip pans, spill kits, etc.).]

3.6 Allowable non-stormwater discharges

[For the allowable non-stormwater discharge(s) associated with construction activity, including dewatering activities, identified, describe controls and measures that will be implemented at those sites to minimize pollutant discharges. This includes irrigation, water related dust control, or other non-stormwater discharges.]

3.7 Material Handling and Waste Management

[Describe measures (i.e., trash disposal, sanitary wastes, recycling, and proper material handling) to prevent the discharge of solid materials to waters of the U.S., except as authorized by a permit issued under section 404 of the CWA.]

3.8 Additional BMPs:

[Describe any additional BMPs that don't fit into the above categories. Indicate the problem they are intended to address.]

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SECTION 4: STORMWATER MANAGEMENT

4.1 General Information

1. Existing Conditions: Refer to Sections 1.5, 2.5, 2.6, and 4.1 of this report and refer to Figure [X] showing a map of existing conditions.

[Provide a map(s) showing the following information.

- a. Topography and Contributing Drainage Areas and patterns;
- b. Existing streams, ponds, culverts, ditches, wetlands, other water bodies, and floodplains;
- c. Soil types, geologic formations if karst features are present in the area, forest cover, and other vegetative areas;
- d. Natural features to be preserved;
- e. Current land use including existing structures, roads, and locations of known utilities and easements; and
- f. Sufficient information on adjoining parcels to assess the impacts of stormwater from the site on these parcels.]
- 2. Proposed Conditions: [Describe the proposed conditions and refer to Figure [X] showing a map of existing conditions.]

[Provide a map(s) showing the following information.

- a. Proposed grading and Drainage Areas;
- b. The limits of clearing and grading, and the proposed drainage patterns on the site:
- c. Proposed buildings, roads, parking areas, utilities, and stormwater management facilities;
- d. Proposed land use with tabulation of the percentage of surface area to be adapted to various uses, including but not limited to planned locations of utilities, roads, and easements; and
- e. Identification and location of proposed stormwater facilities and discharges, including description of the surface waters, or karst features, into which the facility will discharge.]
- 3. Rainfall Values: Rainfall values were based on the VDOT's adoption & implementation of NOAA Atlas 14 rainfall precipitation frequency data. Rational runoff method was utilized to determine peak design flows for the runoff analysis. Rainfall values can be found in [Refer to appendix or table source: http://hdsc.nws.noaa.gov/hdsc/pfds/pfds map cont.html?bkmrk=va].

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- 4. Time of Concentration: Times of Concentration (Tc) for drainage areas were calculated utilizing the [method]. "Time of Concentration" flow routes are shown on [Figures] and the calculations for Tc are located in [Appendix].
- 5. Hydrologic Methodology: [Provide description of methodology used]
- 6. Hydraulic Methodology: [Provide description of methodology used]
- 7. Pre-Development Analysis

[Provide a summary table of pre-development drainage areas including area, curve number, and time of concentration]

8. Development Analysis

[Provide a summary table of development drainage areas including area, curve number, and time of concentration]

4.2 Water Quality Compliance

- 1. Design Criteria: [provide summary of criteria; example New Development: 0.41 lbs / acre / year = X.XX total lbs / acre / year of phosphorus removal required]
- 2. Proposed Best Management Practices (BMPs)
 - a. [type]
 - i. Location:
 - ii. XXX Acres Treated
 - iii. X.XX total lbs / acre / year of phosphorus removal provided
 - b. [type]
 - i. Location:
 - ii. XXX Acres Treated
 - iii. X.XX total lbs / acre / year of phosphorus removal provided
 - c. [type]
 - i. Location:
 - ii. XXX Acres Treated
 - iii. X.XX total lbs / acre / year of phosphorus removal provided
 - d. [type]
 - i. Location:
 - ii. XXX Acres Treated
 - iii. X.XX total lbs / acre / year of phosphorus removal provided
- 3. Compliance Runoff Reduction Method: Refer to Appendix [X] for the runoff reduction spreadsheet.
 - a. Requirement: X.XX total lbs / acre / year of phosphorus removal

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Project Name:		Plans Dated:
Tax / Parcel No(s):		Submittal Number:

- b. Provided: X.XX total lbs / acre / year of phosphorus removal
- c. Adjusted Runoff Curve Number [Provide a summary table of development drainage areas, size, and adjusted runoff curve number]

4.3 Water Quantity Compliance

[Use adjusted curve numbers from the runoff reduction method in calculations below.]

- 1. Channel Protection Criteria: [Man-made][Restored][Natural] stormwater conveyance systems. Refer to Appendix [X] for detailed calculations.
 - a. Q pre-developed, 1-yr, 24-hr = XXX cfs
 - b. RV pre-developed, 1-yr, 24-hr = XXX cf
 - c. Q developed, 1-yr, 24-hr = XXX cfs
 - d. RV developed, 1-yr, 24-hr = XXX cf
 - e. IF = [0.8][0.9]
- 2. Flood Protection Criteria: [Man-made][Restored][Natural] stormwater conveyance systems. Refer to Appendix [X] for detailed calculations.
 - a. Q pre-developed, 10-yr, 24-hr = XXX cfs
 - b. Q developed, 10-yr, 24-hr = XXX cfs
- 3. Proposed Stormwater Management Facilities

[Provide description of any quantity storage, or explanation as to why none is required]

- a. [type and description]
 - i. Location:
 - ii. XXX Acres Tributary Drainage Area
 - iii. [Description of the surface waters, or karst features, into which the facility will discharge.]
 - iv. [Provide a table of pre/post runoff release rates tributary to the facility.]
- b. [type and description]
 - i. Location:
 - ii. XXX Acres Tributary Drainage Area
 - iii. [Description of the surface waters, or karst features, into which the facility will discharge.]
 - iv. [Provide a table of pre/post runoff release rates tributary to the facility.]

4.4 Post-Construction Inspections

1. BMP Description: <u>INSERT TEXT HERE</u>

SWPPP	Page 25 of 32	SWPPP Dated:
Project Name:		Plans Dated:
Tax / Parcel No(s):		Submittal Number:

a. Installation Schedule: <u>INSERT TEXT HERE</u>

b. Maintenance and Inspection:

Description	Method	Frequency	Time of year
INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE
INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE
INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE

c. Responsible Persons: INSERT TEXT HERE

2. BMP Description: <u>INSERT TEXT HERE</u>

a. Installation Schedule: <u>INSERT TEXT HERE</u>

b. Maintenance and Inspection:

Description	Method	Frequency	Time of year
INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE
INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE
INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE

c. Responsible Persons: INSERT TEXT HERE

3. BMP Description: <u>INSERT TEXT HERE</u>

a. Installation Schedule: <u>INSERT TEXT HERE</u>

b. Maintenance and Inspection:

Description	Method	Frequency	Time of year
INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE
INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE
INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE

c. Responsible Persons: INSERT TEXT HERE

Required Certification

The submitted stormwater management narrative (Section 4), including its referenced appendices, and attached plans are complete and meet all applicable requirements to the best of my knowledge.

Licensed Professional S Applicant	gnature / Seal or	Date	
SWPPP	Page 26 of 32	SWPPP Dated:	
Project Name:		Plans Dated:	
Tax / Parcel No(s):		Submittal Number:	

SECTION 5: CONSTRUCTION INSPECTIONS and MAINTENANCE

5.1 Inspections

Inspection Personnel:

Identify the person(s) who will be responsible for conducting inspections and describe their qualifications.

INSERT TEXT HERE

Inspection Schedule and Procedures:

- a. Inspections will be conducted at least once every 14 calendar days and within 48 hours following any runoff producing storm event. Where areas have been temporarily stabilized or runoff is unlikely due to winter conditions (e.g., the site is covered with snow or ice, or frozen ground exists) such inspections will be conducted at least once every month.
 - INSERT TEXT HERE
- b. Describe the general procedures for correcting problems when they are identified. Include responsible staff and timeframes for making corrections.
 - INSERT TEXT HERE
- c. Attach a copy of the inspection report you will use for your site.
 - See Appendix E.

5.2 Maintenance of Controls

Table 5.1 – Maintenance Procedures

Schedule Frequency	Actions to be Taken	Persons Responsible
INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE
INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE
INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE
INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE
INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE

SWPPP	Page 27 of 32	SWPPP Dated:	
Project Name:		Plans Dated:	
Tax / Parcel No(s):		Submittal Number:	

	•	
INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE
INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE
INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE
INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE
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INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE
INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE
INSERT TEXT HERE	INSERT TEXT HERE	INSERT TEXT HERE

SWPPP	Page 28 of 32	SWPPP Dated:	
Project Name:	-	Plans Dated:	
Tax / Parcel No(s):		Submittal Number:	

SECTION 6: TRAINING

Describe Training Conducted:

- General stormwater and BMP awareness training for staff and subcontractors INSERT TEXT HERE
- Detailed training for staff and subcontractors with specific stormwater responsibilities
 INSERT TEXT HERE
- Individual(s) Responsible for Training: INSERT TEXT HERE

6.1 Pre-Construction Training

Date:	<u>mm</u> / <u>dd</u> / <u>yyyy</u>	Start Time: hh:mm	Finish Time: hh:mm
Attend	<u>lees</u>		
	Locality	Number of attendees: <u>INS</u>	ERT TEXT HERE
	☐ A/E	Number of attendees: <u>INS</u>	ERT TEXT HERE
	☐ Contractor	Number of attendees: <u>INS</u>	ERT TEXT HERE
	☐ Subcontractor(s)	Number of attendees: <u>INS</u>	ERT TEXT HERE
<u>Subjec</u>	ts Covered		
•	Locality	INSERT TEXT HERE	
•	Engineer	☐ ESC/SWM Measures	
		INSERT COMMENTS	S HERE
		BMPs	
		 INSERT COMMENTS 	S HERE
		Other(s)	
		INSERT COMMENTS	S HERE
•	Contractor	☐ Project Sequencing	
		INSERT COMMENTS	S HERE
		☐ Material Handling and \	Waste Management
		INSERT COMMENTS	S HERE
SWPPP		Page 29 of 32	SWPPP Dated:
-			Plans Dated:
Tax / Pa	arcel No(s):		Submittal Number:

		☐ Building Material Staging	Area
		 INSERT COMMENTS H 	<u>HERE</u>
		☐ Washout Areas	
		 INSERT COMMENTS F 	<u>HERE</u>
		☐ Equipment/Vehicle Fuelin	g and Maintenance Areas
		■ <u>INSERT COMMENTS F</u>	<u>HERE</u>
		☐ Allowable Non-Stormwate	er Discharges
		■ <u>INSERT COMMENTS F</u>	<u>HERE</u>
		Spill Prevention	
		■ <u>INSERT COMMENTS F</u>	<u>HERE</u>
		☐ Map of Good Housekeepi	ng BMPs
		■ <u>INSERT COMMENTS F</u>	<u>HERE</u>
		☐ Other(s)	
		■ <u>INSERT COMMENTS F</u>	<u>HERE</u>
•	Subcontractor(s)	INSERT TEXT HERE	
6.2	Progress Report Meetin	g	
	Progress Report Meetin	g <u>Start Time:</u> hh:mm	Finish Time: hh:mm
<u>Date:</u>			Finish Time: hh:mm
<u>Date:</u>	mm / dd / yyyy s to Project Completion:	Start Time: hh:mm	Finish Time: hh:mm
<u>Date:</u> Month	mm / dd / yyyy s to Project Completion:	Start Time: hh:mm	
<u>Date:</u> Month	mm / dd / yyyy s to Project Completion:	Start Time: hh:mm INSERT TEXT HERE	RT TEXT HERE
<u>Date:</u> Month	mm / dd / yyyy s to Project Completion: lees Locality	Start Time: hh:mm INSERT TEXT HERE Number of attendees: INSER	RT TEXT HERE RT TEXT HERE
<u>Date:</u> Month	mm / dd / yyyy s to Project Completion: dees Locality Engineer	Start Time: hh:mm INSERT TEXT HERE Number of attendees: INSER Number of attendees: INSER	RT TEXT HERE RT TEXT HERE RT TEXT HERE
<u>Date:</u> <u>Month</u> <u>Attend</u>	mm / dd / yyyy ss to Project Completion: dees Locality Engineer Contractor	Start Time: hh:mm INSERT TEXT HERE Number of attendees: INSER Number of attendees: INSER Number of attendees: INSER	RT TEXT HERE RT TEXT HERE RT TEXT HERE
<u>Date:</u> <u>Month</u> <u>Attend</u>	mm / dd / yyyy ss to Project Completion: lees Locality Engineer Contractor Subcontractor(s)	Start Time: hh:mm INSERT TEXT HERE Number of attendees: INSER Number of attendees: INSER Number of attendees: INSER	RT TEXT HERE RT TEXT HERE RT TEXT HERE
<u>Date:</u> <u>Month</u> <u>Attend</u>	mm / dd / yyyy ss to Project Completion: dees Locality Engineer Contractor Subcontractor(s)	Start Time: hh:mm INSERT TEXT HERE Number of attendees: INSER Number of attendees: INSER Number of attendees: INSER Number of attendees: INSER	RT TEXT HERE RT TEXT HERE RT TEXT HERE
<u>Date:</u> <u>Month</u> <u>Attend</u>	mm / dd / yyyy ss to Project Completion: dees Locality Engineer Contractor Subcontractor(s)	Start Time: hh:mm INSERT TEXT HERE Number of attendees: INSER Number of attendees: INSER Number of attendees: INSER Number of attendees: INSER	RT TEXT HERE RT TEXT HERE RT TEXT HERE RT TEXT HERE
<u>Date:</u> <u>Month</u> <u>Attend</u>	mm / dd / yyyy ss to Project Completion: dees Locality Engineer Contractor Subcontractor(s) sts Covered Locality Locality	Start Time: hh:mm INSERT TEXT HERE Number of attendees: INSER Number of attendees: INSER Number of attendees: INSER Number of attendees: INSER INSERT TEXT HERE	RT TEXT HERE RT TEXT HERE RT TEXT HERE RT TEXT HERE
Date: Month Attend	mm / dd / yyyy ss to Project Completion: dees Locality Engineer Contractor Subcontractor(s) ts Covered Locality Engineer	Start Time: hh:mm INSERT TEXT HERE Number of attendees: INSER Number of attendees: INSER Number of attendees: INSER Number of attendees: INSER INSERT TEXT HERE Final Stabilization Measur (Refer to Section 7)	RT TEXT HERE RT TEXT HERE RT TEXT HERE RT TEXT HERE
Date: Month Attend Subject SWPPP Project	mm / dd / yyyy ss to Project Completion: dees Locality Engineer Contractor Subcontractor(s) ts Covered Locality Engineer	Start Time: hh:mm INSERT TEXT HERE Number of attendees: INSER Number of attendees: INSER Number of attendees: INSER Number of attendees: INSER INSERT TEXT HERE Final Stabilization Measur (Refer to Section 7) Page 30 of 32	RT TEXT HERE RT TEXT HERE RT TEXT HERE RT TEXT HERE

		 INSERT COMMENTS 	<u>HERE</u>
		☐ Other(s)	
		 INSERT COMMENTS 	HERE
•	Contractor	INSERT TEXT HERE	
•	Subcontractor(s)	INSERT TEXT HERE	
6.3	Post-Construction Train	ing	
<u>Date:</u>	<u>mm / dd / yyyy</u>	Start Time: hh:mm	Finish Time: hh:mm
Attend	<u>dees</u>		
	Locality	Number of attendees: <u>INSE</u>	RT TEXT HERE
	☐ Engineer	Number of attendees: <u>INSE</u>	RT TEXT HERE
	☐ Contractor	Number of attendees: <u>INSE</u>	RT TEXT HERE
	☐ Subcontractor(s)	Number of attendees: <u>INSE</u>	RT TEXT HERE
Subjec	cts Covered		
•	Locality INSER	T TEXT HERE	
•	Engineer	☐ Final Stabilization	Measures
		(Refer to Section 7)	
		■ INSERT COMMENTS	HERE
		☐ Post-Construction BMPs	
		(Refer to Section 4)	
		 INSERT COMMENTS 	HERE_
		Other(s)	
		 INSERT COMMENTS 	HERE
•	Contractor	INSERT TEXT HERE	
•	Subcontractor(s)	INSERT TEXT HERE	
C/V/DDD		Dago 21 of 22	SWIDDD Dated:
SWPPP Project	Name:	Page 31 of 32	SWPPP Dated: Plans Dated:
Tax / Pa	arcel No(s):		Submittal Number:

SECTION 7: FINAL STABILIZATION

■ INSERT PROCEDURES FOR FINAL STABILIZATION HERE



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Project Name:		Plans Dated:
Tax / Parcel No(s):		Submittal Number:

APPENDIX J

Erosion Control Notes

Erosion and Sediment Control Plan Notes

An erosion and sediment control program adopted by a district or locality must be consistent with the following minimum standard (MS) criteria, techniques and methods:

- MS-1 Permanent or temporary soil stabilization shall be applied to denuded areas within seven days after final grade is reached on any portion of the site. Temporary soil stabilization shall be applied within seven days to denuded areas that may not be at final grade but will remain dormant (undisturbed) for longer than 14 days. Permanent stabilization shall be applied to areas that are to be left dormant for more than one year.
- MS-2 During construction of the project, soil stockpiles shall be stabilized or protected with sediment trapping measures. The contractor is responsible for the temporary protection and permanent stabilization of all soil stockpiles on site as well as soil intentionally transported from the project site.
- MS-3 A permanent vegetative cover shall be established on denuded areas not otherwise permanently stabilized. Permanent vegetation shall not be considered established until a ground cover is achieved that, in the opinion of the local Authority, is uniform, mature enough to survive and will inhibit erosion.
- MS-4 Sediment basins and traps, perimeter dikes, sediment barriers, and other measures intended to trap sediment shall be constructed as a first step in any land disturbing activity, and shall be made functional before upslope land disturbance takes place.
- MS-5 Stabilization measures shall be applied to earthen structures such as dams, dikes and diversions immediately after installation.
- MS-6 Sediment traps and sediment basins shall be designed and constructed based upon the total drainage area to be served by the trap or basin.
 - (a) The minimum storage capacity of a sediment trap shall be 134 cubic yards per acre of drainage area and the trap shall only control drainage areas less than three acres.
 - (b) The surface runoff from disturbed areas that is comprised of flow from drainage areas greater than or equal to three acres shall be controlled by a sediment basin. The minimum storage capacity of a sediment basin shall be 134 cubic yards per acre of drainage area. The outfall system shall, at a minimum, maintain the structural integrity of the basin during a twenty-five year storm of 24-hour duration. Runoff coefficients used in runoff calculations shall correspond to a bare earth condition or those conditions expected to exist while the sediment basin is utilized.

- MS-7 Cut and fill slopes shall be designed and constructed in a manner that will minimize erosion. Slopes that are found to be eroding excessively within one year of permanent stabilization shall be provided with additional slope stabilizing measures until the problem is corrected.
- MS-8 Concentrated runoff shall not flow down cut or fill slopes unless contained within an adequate temporary or permanent channel, flume or slope drain structure.
- MS-9 Whenever water seeps from a slope face, adequate drainage or other protection shall be provided.
- MS-10 All storm sewer inlets that are made operable during construction shall be protected so that sediment-laden water cannot enter the conveyance system without first being filtered or otherwise treated to remove sediment.
- MS-11 Before newly constructed stormwater conveyance channels or pipes are made operational, adequate outlet protection and any required temporary or permanent channel lining shall be installed in both the conveyance channel and receiving channel.
- MS-12 When work in a live watercourse is performed, precautions shall be taken to minimize encroachment, control sediment transport and stabilize the work area to the greatest extent possible during construction. Non-erodible material shall be used for the construction of causeways and cofferdams. Earthen fill may be used for these structures if armored by non-erodible cover materials.
- MS-13 When a live watercourse must be crossed by construction vehicles more than twice in any six-month period, a temporary vehicular stream crossing constructed of non-erodible material shall be provided.
- MS-14 All applicable federal, state and local regulations pertaining to working in or crossing live watercourses shall be met.
- MS-15 The bed and banks of a watercourse shall be stabilized immediately after work in the watercourse is completed.
- MS-16 Underground utility lines shall be installed in accordance with the following standards in addition to other applicable criteria:
 - 1. No more than 500 linear feet of trench may be opened at one time.
 - 2. Excavated material shall be placed on the uphill side of trenches.
 - 3. Effluent from dewatering operations shall be filtered or passed through an approved sediment trapping device, or both, and discharged in a manner that does not adversely affect flowing streams or off-site property.

- 4. Material used for backfilling trenches shall be properly compacted in order to minimize erosion and promote stabilization.
- 5. Re-stabilization shall be accomplished in accordance with these regulations.
- 6. Applicable safety regulations shall be complied with.

MS-17 Where construction vehicle access routes intersect paved public roads, provisions shall be made to minimize the transport of sediment by vehicular tracking onto the paved surface. Where sediment is transported onto a public road surface, the road shall be cleaned thoroughly at the end of each day. Sediment shall be removed from the roads by shoveling or sweeping and transported to a sediment control disposal area. Street washing shall be allowed only after sediment is removed in this manner. This provision shall apply to individual subdivision lots as well as to larger land-disturbing activities.

MS-18 All temporary erosion control measures shall be removed within 30 days after final site stabilization, or after the temporary measures are no longer needed unless otherwise authorized by the VESCP administrator. Trapped sediment and the disturbed soil areas resulting from the disposition of temporary measures shall be permanently stabilized to prevent further erosion and sedimentation.

MS-19 Properties and waterways downstream from development sites shall be protected from sediment deposition, erosion and damage due to increases in volume, velocity and peak flow rate of stormwater runoff for the stated frequency storm of 24-hour duration in accordance with the following standards and criteria. Stream restoration and relocation projects that incorporate natural channel design concepts are not man-made channels and shall be exempt from any flow rate capacity and velocity requirements for natural or man-made channels:

- Concentrated stormwater runoff leaving a development site shall be discharged directly into an adequate natural or man-made receiving channel, pipe or storm sewer system. For those sites where runoff is discharged into a pipe or pipe system, downstream stability analyses at the outfall of the pipe or pipe system shall be performed.
- 2. Adequacy of all channels and pipes shall be verified in the following manner:
 - a) The applicant shall demonstrate that the total drainage area to the point of analysis within the channel is one hundred times greater than the contributing drainage area of the project in question; or
 - Natural channels shall be analyzed by the use of a two-year storm to verify that stormwater will not overtop channel banks nor cause erosion of channel bed or banks.
 - ii) All previously constructed man-made channels shall be analyzed by the use of a ten-year storm to verify that stormwater will not overtop its banks and by the use of a two-year storm to demonstrate that stormwater will not cause erosion of channel bed or banks; and

- iii) Pipes and storm sewer systems shall be analyzed by the use of a ten-year storm to verify that stormwater will be contained within the pipe or system.
- b) If existing natural receiving channels or previously constructed man-made channels or pipes are not adequate, the applicant shall:
 - i) Improve the channels to a condition where a ten-year storm will not overtop the banks and a two-year storm will not cause erosion to channel the bed or banks; or
 - ii) Improve the pipe or pipe system to a condition where the ten-year storm is contained within the appurtenances;
 - iii) Develop a site design that will not cause the pre-development peak runoff rate from a two-year storm to increase when runoff outfalls into a natural channel or will not cause the pre-development peak runoff rate from a ten-year storm to increase when runoff outfalls into a man-made channel; or
 - iv) Provide a combination of channel improvement, stormwater detention or other measures which is satisfactory to the VESCP authority to prevent downstream erosion.
- 3. The applicant shall provide evidence of permission to make the improvements.
- 4. All hydrologic analyses shall be based on the existing watershed characteristics and the ultimate development condition of the subject project.
- 5. If the applicant chooses an option that includes stormwater detention, he shall obtain approval from the VESCP of a plan for maintenance of the detention facilities. The plan shall set forth the maintenance requirements of the facility and the person responsible for performing the maintenance.
- Outfall from a detention facility shall be discharged to a receiving channel, and energy dissipaters shall be placed at the outfall of all detention facilities as necessary to provide a stabilized transition from the facility to the receiving channel.
- 7. All on-site channels must be verified to be adequate.
- 8. Increased volumes of sheet flows that may cause erosion or sedimentation on adjacent property shall be diverted to a stable outlet, adequate channel, pipe or pipe system, or to a detention facility.
- 9. In applying these stormwater management criteria, individual lots or parcels in a residential, commercial or industrial development shall not be considered to be separate development projects. Instead, the development, as a whole, shall be considered to be a single development project. Hydrologic parameters that reflect the ultimate development condition shall be used in all engineering calculations.
- 10. All measures used to protect properties and waterways shall be employed in a manner which minimizes impacts on the physical, chemical and biological integrity of rivers, streams and other waters of the state.
- 11. Any plan approved prior to July 1, 2014, that provides for stormwater management that addresses any flow rate capacity and velocity requirements

for natural or man-made channels shall satisfy the flow rate capacity and velocity requirements for natural or man-made channels if the practices are designed to:

- a) Detain the water quality volume and to release it over 48 hours;
- b) Detain and release over a 24-hour period the expected rainfall resulting from the one year, 24-hour storm; and
- c) Reduce the allowable peak flow rate resulting from the 1.5, 2, and 10-year, 24-hour storms to a level that is less than or equal to the peak flow rate from the site assuming it was in a good forested condition, achieved through multiplication of the forested peak flow rate by a reduction factor that is equal to the runoff volume from the site when it was in a good forested condition divided by the runoff volume from the site in its proposed condition, and shall be exempt from any flow rate capacity and velocity requirements for natural or man-made channels as defined in any regulations promulgated pursuant to § 10.1-562 or 10.1-570 of the Act.
- d) For plans approved on and after July 1, 2014, the flow rate capacity and velocity requirements of § 62.1-44.15:51 for the Act and this subsection shall be satisfied by compliance with water quantity requirements in the Stormwater Management Act (§ 62.1-44.15:24 et seq. of the Code of Virginia) and attendant regulations, unless such land-disturbing activities are in accordance with 4VAC50-60-48 of the Virginia Stormwater Management Program (VSMP) permit regulations.
- e) Compliance with the water quantity minimum standards set out in 9VAC25-870-66 of the Virginia Stormwater Management Program (VSMP) permit regulations shall be deemed to satisfy the requirements of minimum standard 19.

APPENDIX K

Virginia Runoff Reduction Method Compliance Spreadsheets

Virginia Runoff Reduction Meth	da New Devel	opinent works	11eet V2.6 _201	Topecs	
Site Data	Revised April 201	14			
Project Name:	•		•		
Date:					
	data input cells				
	calculation cells				
	constant values				
1. Post-Development Project & I	and Cover In	formation			
Constants					
Annual Rainfall (inches)	43				
Target Rainfall Event (inches)	1.00				
Phosphorus EMC (mg/L)	0.26		Nitrogen EMC (mg/L)	1.86	
Target Phosphorus Target Load (lb/acre/yr)	0.41		THROGET LINE (Hig/L)	1.00	
Pj	0.90				+
<u>' J</u>	0.30				+
Land Cover (acres)					
·	A soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) undisturbed,	0.00	0.00	0.00	0.00	0.00
protected forest/open space or reforested land	0.00	0.00	0.00	0.00	0.00
Managed Turf (acres) disturbed, graded for yards or other turf to be mowed/managed	0.00	0.00	0.00	0.00	0.00
Impervious Cover (acres)	0.00	0.00	0.00	0.00	0.00
impervious cover (acres)	0.00	0.00	0.00	Total	0.00
				TOtal	0.00
Rv Coefficients					
	A soils	B Soils	C Soils	D Soils	
Forest/Open Space	0.02	0.03	0.04	0.05	
Managed Turf	0.15	0.20	0.22	0.25	
Impervious Cover	0.95	0.95	0.95	0.95	
Land Cover Summary					
Forest/Open Space Cover (acres)	0.00				
Weighted Rv(forest)	0.00				
% Forest	0%				
Managed Turf Cover (acres)	0.00				
Weighted Rv(turf)	0.00				
% Managed Turf	0%				
Impervious Cover (acres)	0.00				
Rv(impervious)	0.95				
% Impervious	0%	,			
Total Site Area (acres)	0.00				
Site Rv	0.00				
Post-Development Treatment Volume (acre-ft) Post-Development Treatment Volume (cubic	0.00				
feet)	0				
Post_Development Load (TP) (lb/yr)	0.00		opment Load (TN) (lb/yr)	0.00	
Total Load (TP) Reduction Required (lb/yr)	0.00				

Designation Acres A																			1			
Drainage Area A Drainage Area A Land Cover (acres)																						
Forest/Open Space (acres)	0.00	B Soils 0.00	C Soils 0.00	D Soils 0.00	Totals 0.00	Land Cover Rv 0.00																
Managed Turf (acres) Impervious Cover (acres)	0.00	0.00	0.00	0.00	0.00 0.00 0.00	0.00																
Apply Runoff Reduction Practi	cos to Rodu	oo Trootme		Total		t Load in Dra	inago Aroa A	Post Develo	pment I reatme	nt Volume (cf)	0											
Abbit Kulloli Keductioli Flacti	Ces to Redu	ice rreating	Voidi.	ile a rost-b	evelobilien		Volume from Upstream RR	Runoff	Remaining		Phosphorus Load from Upstream RR	Untreated Phosphorus	Phosphorus	Remaining	1		Nitrogen Efficiency	Nitrogen Load from Upstream RR Practices	Untreated Nitrogen Load to Practice	Nitrogen Removed By	Remaining Nitrogen Load	
Practice	u	nit	Descript	tion of Credit	Credit	Credit Area (acres)	Upstream RR Practice (cf)	Reduction (cf)	Remaining Runoff Volume (cf)	Phosphorus Efficiency (%)	Upstream RR Practices (lbs)	Phosphorus Load to Practice (lbs.)	Phosphorus Removed By Practice (lbs.)	Phosphorus Load (lbs.)	Downstream Treatment to be Employed		രമ	(lbs)	(lbs.)	Practice (lbs.)	Nitrogen Load (lbs.)	
1. Vegetated Roof			45% ru	noff volume													1. Green R	toof				
1.a. Vegetated Roof #1 (Spec #5)	acres of c		593	duction moff volume	0.45	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00	
1.b. Vegetated Roof #2 (Spec #5)	acres of c	reen roof	rec	duction	0.60	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00	
Rooftop Disconnection Simple Disconnection to A/B Soils (Spec	1		F001	noff volume													2. Impervi	ous Surface Dis	connection			-
#1) 2.b. Simple Disconnection to C/D Soils (Spec	impervious acre	s disconnected	reduction fi	for treated area inoff volume	0.50	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00	-
#1)	impervious acre	s disconnected	reduction for	for treated area	0.25	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00	
2.c. To Soil Amended Filter Path as per specifications (existing C/D soils) (Spec #4)	impervious acre	s disconnected	reduction for	noff volume for treated area	0.50	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00	
2.d. To Dry Well or French Drain #1 (Microinfilration #1) (Spec #8)	impervious acre	s disconnected	reduction fi	noff volume for treated area noff volume	0.50	0.00	0	0	0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00	_
2.e. To Dry Well or French Drain #2 (Micro- Infiltration #2) (Seec #8) 2.f. To Rain Garden #1 (Micro-Bicretention	impervious acre	s disconnected		for treated area	0.90	0.00	0	0	0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00	
#1) (Spec #9) 2.g. To Rain Garden #2 (Micro-Bioretention	impervious acre	s disconnected	80% nu	olume captured unoff volume for treated area	0.40	0.00	0	0	0	25	0.00	0.00	0.00	0.00			40	0.00	0.00	0.00	0.00	-
#2) (Spec #9)	impervious acre	s disconnected	based on	tank size and	0.80	0.00	0	0	0	50	0.00	0.00	0.00	0.00			60	0.00	0.00	0.00	0.00	
2.h. To Rainwater Harvesting (Spec #6)	impervious ad	res captured	design spn	neadsheet (See sec #6)	0.00	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00	
2.i. To Stormwater Planter (Urban Bioretention) (Spec #9. Appendix A)	impervious acre	s disconnected	40% ru reduction fi	noff volume for treated area	0.40	0.00	0	0	0	25	0.00	0.00	0.00	0.00			40	0.00	0.00	0.00	0.00	ĺ
3. Permeable Payement					1																	
Permeable Pavement #1 (Spec #7)	acres of perme + acres of	able pavement	45% nu	noff volume													3. Permea	ble Pavement				
	+ acres or (upgradient)	impervious	190	duction noff volume	0.45	0.00	0	0	0	25	0.00	0.00	0.00	0.00			25	0.00	0.00	0.00	0.00	_
3.b. Permeable Pavement #2 (Spec #7)	acres of perme			duction	0.75	0.00	0	0	0	25	0.00	0.00	0.00	0.00			25	0.00	0.00	0.00	0.00	上
4. Grass Channel																	4. Grass C	hannel				L_
4.a. Grass Channel A/B Soils (Spec #3)	impervious aci	hannels	190	noff volume duction	0.20	0.00	0	0	0	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00	-
	turf acres dra char	nes	rec	noff volume duction	0.20	0.00	0	0	0	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00	-
4.b. Grass Channel C/D Soils (Spec #3)	impervious ac grass cl turf acres dra	nannels	593	noff volume duction noff volume	0.10	0.00	0	0	0	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00	\vdash
	turf acres dra char impervious acr	nels	rec	noff volume duction noff volume	0.10	0.00	0	0	0	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00	\vdash
Grass Channel with Compost Amended Soils as per specs (see Spec #4)	impervious aci grass cl turf acres dra	hannels	593	noff volume duction noff volume	0.30	0.00	0	0	0	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00	\vdash
	char	nels	rec	duction	0.30	0.00	0	0	0	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00	
5. Dry Swale				noff volume													5. Dry Swa	ile				
5.a. Dry Swale #1 (Spec #10)	impervious aci	res draining to wate	593	duction	0.40	0.00	0	0	0	20	0.00	0.00	0.00	0.00			25	0.00	0.00	0.00	0.00	
	turf acres draini		593	noff volume duction noff volume	0.40	0.00	0	0	0	20	0.00	0.00	0.00	0.00			25	0.00	0.00	0.00	0.00	
5.b. Dry Swale #2 (Spec #10)	impervious ac dry s	res draining to wate	593	duction noff volume	0.60	0.00	0	0	0	40	0.00	0.00	0.00	0.00			35	0.00	0.00	0.00	0.00	-
	turf acres draini	ng to dry swale	rec	duction	0.60	0.00	0	0	0	40	0.00	0.00	0.00	0.00			35	0.00	0.00	0.00	0.00	-
6. Bioretention					1												6. Bioreter	ntion				
6.a. Bioretention #1 or Urban Bioretention (Spec #9)	impervious aci bioreti	antion	rec	noff volume duction	0.40	0.00	0	0	0	25	0.00	0.00	0.00	0.00			40	0.00	0.00	0.00	0.00	
(open ma)	turf acres : bioret	ention	593	noff volume duction	0.40	0.00	0	0	0	25	0.00	0.00	0.00	0.00			40	0.00	0.00	0.00	0.00	
6.b. Bioretention #2 (Spec #9)	impervious aci bioreti turf acres	ention	rec	noff volume duction noff volume	0.80	0.00	0	0	0	50	0.00	0.00	0.00	0.00			60	0.00	0.00	0.00	0.00	
	biores		80% ru	duction	0.80	0.00	0	0	0	50	0.00	0.00	0.00	0.00			60	0.00	0.00	0.00	0.00	-
7. Infiltration																	7. Infiltrati	on				
7.a. Infiltration #1 (Spec #8)	impervious aci	res draining to ation	590	noff volume duction	0.50	0.00	0	0	0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00	
	turf acres draini		rec	noff volume duction	0.50	0.00	0	0	0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00	
7.b. Infiltration #2 (Spec #8)	impervious aci infilts	res draining to ation	193	noff volume duction	0.90	0.00	0	0	0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00	
	turf acres draini	ng to infiltration	90% ru	noff volume duction	0.90	0.00	0	0	0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00	
8. Extended Detention Pond																	8. Extende	ed Detention Po	nd			
8.a. ED #1 (Spec #15)	impervious aci	nes draining to D	0% runoff v	olume reduction	0.00	0.00	0	0	0	15	0.00	0.00	0.00	0.00			10	0.00	0.00	0.00	0.00	
,,,,,,	turf acres dr	aining to ED	0% runoff v	olume reduction	0.00	0.00	0	0	0	15	0.00	0.00	0.00	0.00			10	0.00	0.00	0.00	0.00	
8.b. ED #2 (Spec #15)	impervious aci	res draining to D	593	noff volume duction	0.15	0.00	0	0	0	15	0.00	0.00	0.00	0.00			10	0.00	0.00	0.00	0.00	
	turf acres dr	aining to ED	15% ru re:	noff volume duction	0.15	0.00	0	0	0	15	0.00	0.00	0.00	0.00			10	0.00	0.00	0.00	0.00	
9. Sheetflow to Filter/Open Space																	9. Sheetflo	ow to Conservat	tion Area or Fil	ter Strip		
	conserved (res draining to open space	reduction for	noff volume for treated area	0.75	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00	
9.a. Sheetflow to Conservation Area with A/B Soils (Spec #2)	turf acres conserved	open spece	reduction for	noff volume for treated area	0.75	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00	
L	impervious acconserved of	open space	reduction a	noff volume for treated area	0.50	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00	_
9.b. Sheetflow to Corservation Area with C/D Soils (Seec #2)	turf acres conserved	open space	volume fo	noff reduction or treated area	0.50	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00	-
9.c. Sheetflow to Vegetated Filter Strip in A Soils or Compost Amended B/C/D Soils	impervious acr	res draining to strip	50% ru reduction fi 50% run	noff volume for treated area off reduction	0.50	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00	_
Soils or Compost Amended BICID Soils (Spec #2 & #4)	turf acres drain	ing to filter strip	volume fo	or treated area	0.50	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00	
				RVIOUS COVER		0.00																┢
					AREA CHECK	OK.																F
				TOTAL P		EMOVAL REQUIRE	ION IN D.A. A (cf)	0.00														E
	000	WATER OUT	SPHORUS R	DI IANCE TO	RUNOFF REDU	OMDI IANCE O	ALCULATIONS	0.00							NITROGEN R	EMOVAL FROM	TOTAL RUNOFF REDU	RUNOFF REDUCT OCTION PRACTICE	S IN D.A. A (b/yr)	0.00		
	SEÉ	AIER QUA	LII (COM	. LIANUE TAE	rok SITE C	OMPLIANCE CA	COLATIONS															E
Apply Practices that Remove P	ollutants bu	ıt Do Not R	leduce Ri	unoff Volun	ne																	
						Credit Area	Volume from Upstream RR	Runoff Reduction	Remaining Runoff	Phosphorus	Phosphorus Load from Upstream RR	Untreated Phosphorus Load to	Phosphorus Removed By	Remaining Phosphorus			Nitrogen Efficiency	Nitrogen Load from Upstream RR Practices	Untreated Nitrogen Load to Practice	Nitrogen Removed By Practice	Remaining Nitrogen Load	
Practice	u	nit	Descript	tion of Credit	Credit	(acres)	Upstream RR Practice (cf)	Reduction (cf)	Volume (cf)	Phosphorus Efficiency (%)	Upstream RR Practices (lbs)	Load to Practice (lbs.)	Practice (lbs.)	Phosphorus Load (lbs.)	Downstream Treatment to be Employed		(%)	(lbs)	(Ibs.)	Practice (lbs.)	Nitrogen Load (lbs.)	_
10. Wet Swale (Coastal Plain)	impervious acr	res draining to															10. Wet Sv	vale (Coastal Pl				
	wets	wale	0% runoff v	olume reduction	0.00	0.00	0	0	0	20	0.00	0.00	0.00	0.00			25	0.00	0.00	0.00	0.00	
10.a. Wet Swale #1 (Spec #11)	turf acres draini impervious acr		0% runoff v	olume reduction	0.00	0.00	0	0	0	20	0.00	0.00	0.00	0.00			25	0.00	0.00	0.00	0.00	
10.b. Wet Swale #2 (Spec #11)	wels	wan	0% runoff v	olume reduction	0.00	0.00	0	0	0	40	0.00	0.00	0.00	0.00			35 35	0.00	0.00	0.00	0.00	
	turf acres draini	J to wet swale	unoff v	olume reduction	0.00	0.00	U		U	40	0.00	0.00	0.00	0.00					0.00	0.00	0.00	F
11. Filtering Practices	impervious ac	res draining to														-		ng Practices				-
	190	er	0% runoff v	olume reduction	0.00	0.00	0	0	0	60	0.00	0.00	0.00	0.00			30	0.00	0.00	0.00	0.00	
11.a Filtering Practice #1 (Spec #12)	turf acres dra impervious ac		0% runoff v	olume reduction	0.00	0.00	0	0	0	60	0.00	0.00	0.00	0.00			30	0.00	0.00	0.00	0.00	
445 5500 5 5 5	9	er	0% runoff v	olume reduction	0.00	0.00	0	0	0	65	0.00	0.00	0.00	0.00			45	0.00	0.00	0.00	0.00	
11.b. Filtering Practice #2 (Spec #12)	turf acres dra	uning to filter	0% runoff v	olume reduction	0.00	0.00	0	0	0	65	0.00	0.00	0.00	0.00			45	0.00	0.00	0.00	0.00	F
12. Constructed Wetland	impervious ac	res draining to															12. Constr	ucted Wetland				
	weti	and	0% runoff v	olume reduction	0.00	0.00	0	0	0	50	0.00	0.00	0.00	0.00		}	25	0.00	0.00	0.00	0.00	H
12.a.Constructed Wetland #1 (Spec #13)	turf acres drain impervious acr		0% runoff v	olume reduction	0.00	0.00	0	0	0	50	0.00	0.00	0.00	0.00			25	0.00	0.00	0.00	0.00	\vdash
	wet	and	0% runoff v	olume reduction	0.00	0.00	0	-0	0	75	0.00	0.00	0.00	0.00		-	55	0.00	0.00	0.00	0.00	
12.b. Constructed Wetland #2 (Spec #13)	tuf acres drain	ning to wetland	0% runoff v	olume reduction	0.00	0.00	0	0	0	75	0.00	0.00	0.00	0.00			55	0.00	0.00	0.00	0.00	
13. Wet Ponds	impervious ac	res draining to															13. Wet Po					
	wet p	oond	0% runoff v	olume reduction	0.00	0.00	0	0	0	50	0.00	0.00	0.00	0.00			30	0.00	0.00	0.00	0.00	\vdash
					0.00	0.00					0.00	0.00	0.00	0.00		i	30	0.00	0.00	0.00	0.00	

	impervious acres draining																	$\overline{}$		_
	wet pond	0% runoff v	olume reduction	0.00	0.00	0	0	0	45	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00	4
13.b. Wet Pond #1 (Coastal Plain) (Spec #14)	turf acres draining to wet p	and 0% runoff v	olume reduction	0.00	0.00	0	0	0	45	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00	
	impervious acres draining wet pond		olume reduction	0.00	0.00	0	0	0	75	0.00	0.00	0.00	0.00		40	0.00	0.00	0.00	0.00	
13.c. Wet Pond #2 (Spec #14)	turf acres draining to wet po	and 0% runoff v	olume reduction	0.00	0.00	0	0	0	75	0.00	0.00	0.00	0.00		40	0.00	0.00	0.00	0.00	
	impervious acres draining wet pond	to 0% runoff v	olume reduction	0.00	0.00	0	0	0	65	0.00	0.00	0.00	0.00		30	0.00	0.00	0.00	0.00	
13.d. Wet Pond #2 (Coastal Plain) (Spec #14)	turf acres draining to wet or	and 0% runoff v	olume reduction	0.00	0.00	0	0	0	65	0.00	0.00	0.00	0.00		30	0.00	0.00	0.00	0.00	
14. Manufactured BMP															14. Manufa	ctured BMP				
	impervious acres draining device		olume reduction	0.00	0.00	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	
14. Insert Name of Device	turf acres draining to devi	se 0% runoff v	olume reduction	0.00	0.00	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	
		TOTAL IMPE	RVIOUS COVER	R TREATED (ac)	0.00													\vdash		+
		TO	TAL TURF AREA	TREATED (ac)	0.00															-
				AREA CHECK	OK.															=
	PHOSPHOR	US REMOVAL E	Y PRACTICES 1		EDUCE RUNOFF V		0.00													
					PHORUS REMOVA		0.00											\perp		\perp
	SEE WATER O	UALITY COM	PLIANCE TAE	FOR SITE C	OMPLIANCE CA	LCULATIONS												+	-	+
					EDUCE RUNOFF V		0.00											=	-	=
	NIKO	EN REMOVAL E	Y PRACTICES		FROGEN REMOVA													†		+

Drainage Area B		1	т —																	$\overline{}$
Drainage Area B Land Cover (acres	a)																			F
Forest/Open Space (acres) Managed Turf (acres)	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00	0.00 0.00																H
Impervious Cover (acres)	0.00 0.00	0.00 0.00 Total	0.00	0.00		Post Develop	pment Treatme	ent Volume (cf)	0											F
Apply Runoff Reduction P	Practices to Reduce Tr			pment Load i	n Drainage A															
				Credit Area	Volume from Upstream RR	Runoff Reduction	Remaining Runoff	Phosphorus	Phosphorus Load from Upstream RR	Untreated Phosphorus Load to	Phosphorus Removed By Practice (lbs.)	Remaining Phosphonus			Nitrogen Efficiency	Nitrogen Load from Upstream RR Practices	Untreated Nitrogen Load to Practice (lbs.)	Nitrogen Removed By Practice	Remaining Nitrogen Load (lbs.)	
Practice	Unit	Description of Credit	Credit	(acres)	Practice (cf)	(cf)	Volume (cf)	Efficiency (%)	Practices (lbs)	Practice (lbs.)	Practice (lbs.)	Load (lbs.)	Downstream Treatment to be Employed		rsa rsa		(lbs.)	(lbs.)	(lbs.)	
1. Vegetated Roof		45% runoff volume		0.00					0.00		0.00	0.00			1. Green R			0.00		Н
1.a. Vegetated Roof #1 (Spec #5)	acres of oreen roof	reduction 60% runoff volume	0.45	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00	
1.b. Vegetated Roof #2 (Spec #5)	acres of green roof	reduction	0.60	0.00	- 0				0.00	0.00	0.00	0.00			U	0.00	0.00	0.00	0.00	
Rooftop Disconnection a. Simple Disconnection to A/B		50% runoff volume													2. Impervi	ous Surface Dis	connection			
Soils (Spec #1) 2.b. Simple Disconnection to C/D	impervious acres disconnected	d reduction for treated area 25% runoff volume	0.50	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00	H
Soils (Spec #1) 2.c. To Soil Amended Filter Path as per specifications (existing C/D soils)	impervious acres disconnected	d reduction for treated area	0.25	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00	H
(Spec #4)	impervious acres disconnected	50% runoff volume d reduction for treated area	0.50	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00	
2.d. To Dry Well or French Drain #1 (Microinfilration #1) (Spec #8)	impervious acres disconnected	50% runoff volume d reduction for treated area	0.50	0.00	0	0	0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00	
2.e. To Dry Well or French Drain #2 (Micro-Infiltration #2) (Spec #8)	impervious acres disconnected	90% runoff volume d reduction for treated area	0.90	0.00	0	0	0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00	
2.f. To Rain Garden #1 (Micro- Bioretention #1) (Spec #9)	impervious acres disconnected	d 40% of volume captured	0.40	0.00	0	0	0	25	0.00	0.00	0.00	0.00			40	0.00	0.00	0.00	0.00	
2.g. To Rain Garden #2 (Micro- Bioretention #2) (Spec #9)	impervious acres disconnected	80% runoff volume d reduction for treated area	0.80	0.00	0	0	0	50	0.00	0.00	0.00	0.00			60	0.00	0.00	0.00	0.00	
2.h. To Rainwater Harvesting (Spec	impensious acres cantured	based on tank size and design spreadsheet (See Spec #6)	0.00	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00	
2.i. To Stormwater Planter (Urban Bioretention) (Spec #9. Appendix A)	impervious acres disconnected	40% runoff volume d reduction for treated area	0.40	0.00	0	0	0	25	0.00	0.00	0.00	0.00			40	0.00	0.00	0.00	0.00	
Permeable Pavement A. Permeable Pavement #1 (Spec	acres of permeable pavement + acres of "external"														3. Permeal	ole Pavement				
#7)	+ acres of "external" (upgradient) impervious	45% runoff volume reduction	0.45	0.00	0	0	0	25	0.00	0.00	0.00	0.00			25	0.00	0.00	0.00	0.00	
3.b. Permeable Pavement #2 (Spec #7)	acres of permeable pavement	75% runoff volume reduction	0.75	0.00	0	0	0	25	0.00	0.00	0.00	0.00			25	0.00	0.00	0.00	0.00	L
4. Grass Channel															4. Grass C	bannel				H
4. Grass Channel 4.a. Grass Channel A/B Soils (Spec	impervious acres draining to	20% runoff volume reduction	0.20	0.00	0	0	0	15	0.00	0.00	0.00	0.00			4. Grass C	0.00	0.00	0.00	0.00	
4.a. Grass Channel A/B Soils (Spec #3)	grass channels turf acres draining to grass channels	reduction 20% runoff volume reduction	0.20	0.00	^		٥	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00	
	impervious acres draining to grass channels	10% runoff volume reduction	0.10	0.00	0	0	0	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00	
i.b. Grass Channel C/D Soils (Spec #3	turf acres draining to grass	10% runoff volume	0.10	0.00	^	^	^	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00	
4.c. Grass Channel with Compost	channels impervious acres draining to grass channels	reduction 30% runoff volume reduction	0.10	0.00	0	0	0	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00	
4.c. Grass Channel with Compost Amended Soils as per specs (see Spec #4)	grass channels turf acres draining to grass channels	reduction 30% runoff volume reduction	0.30	0.00	0	0	0	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00	
	channels	resourceOft	0.00	UAN					0.00	0.00	0.00	0.00				0.00	v.w	230	0.00	
5. Dry Swale	impervious acres draining to	40% runoff volume													5. Dry Swa					
5.a. Dry Swale #1 (Spec #10)	dry swale	reduction 40% runoff volume	0.40	0.00	0	0	0	20	0.00	0.00	0.00	0.00			25	0.00	0.00	0.00	0.00	Н
	turf acres draining to dry swale impervious acres draining to	reduction 60% runoff volume	0.40	0.00	0	0	0	20	0.00	0.00	0.00	0.00			25	0.00	0.00	0.00	0.00	Н
5.b. Dry Swale #2 (Spec #10)	dry swale	reduction 60% runoff volume	0.60	0.00	0	0	0	40	0.00	0.00	0.00	0.00			35	0.00	0.00	0.00	0.00	H
	turf acres draining to dry swale	reduction	0.60	0.00	0	0	0	40	0.00	0.00	0.00	0.00			35	0.00	0.00	0.00	0.00	┰
6. Bioretention		<u>, </u>													6. Bioreter	ntion				
6.a. Bioretention #1 or Urban	impervious acres draining to bioretention	reduction	0.40	0.00	0	0	0	25	0.00	0.00	0.00	0.00			40	0.00	0.00	0.00	0.00	
Bioretention (Spec #9)	turf acres draining to bioretention	40% runoff volume reduction	0.40	0.00	0	0	0	25	0.00	0.00	0.00	0.00			40	0.00	0.00	0.00	0.00	
6.b. Bioretention #2 (Spec #9)	impervious acres draining to bioretention	80% runoff volume reduction	0.80	0.00	0	0	0	50	0.00	0.00	0.00	0.00			60	0.00	0.00	0.00	0.00	
	turf acres draining to bioretention	80% runoff volume reduction	0.80	0.00	0	0	0	50	0.00	0.00	0.00	0.00			60	0.00	0.00	0.00	0.00	
7. Infiltration															7. Infiltration	on				H
	impervious acres draining to infiltration	50% runoff volume	0.50	0.00	0	0	0	26	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00	
7.a. Infiltration #1 (Spec #8)	turf acres draining to infiltration	50% runoff volume	0.50	0.00				25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00	г
	impervious acres draining to infiltration	90% runoff volume reduction	0.90	0.00	0		0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00	
7.b. Infiltration #2 (Spec #8)	turf acres draining to infiltration	90% runoff volume	0.90	0.00	0			25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00	Г
		T		0.50						0.00	0.00	0.00						2.32	5.55	
8. Extended Detention Pond	impervious acres draining to														8. Extende					
8.a. ED #1 (Spec #15)	ED	Urs. runort volume reduction	0.00	0.00	0	0	0	15	0.00	0.00	0.00	0.00			10	0.00	0.00	0.00	0.00	⊢
	turf acres draining to ED impervious acres draining to	0% runoff volume reduction 15% runoff volume	0.00	0.00	0	0	0	15	0.00	0.00	0.00	0.00			10	0.00	0.00	0.00	0.00	Н
8.b. ED #2 (Spec #15)	ED	reduction 15% runoff volume	0.15	0.00	- 0	0	0	15	0.00	0.00	0.00	0.00			10	0.00	0.00	0.00	0.00	-
	turf acres draining to ED	reduction	0.15	0.00	0	0	0	15	0.00	0.00	0.00	0.00			10	0.00	0.00	0.00	0.00	
9. Sheetflow to Filter/Open Spa	ace	1													9. Sheetflo	w to Conservat	ion Area or Filt	er Strip		
1	impervious acres draining to conserved open space	reduction for treated area	0.75	0.00															0.00	-1
9.a. Sheetflow to Conservation Area with A/B Soils (Spec #2)	turf acres draining to conserved open space			0.00	0	-	- 0	- ŭ	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00	-
1	impervious acres draining to	75% runoff volume reduction for treated area	0.75	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00	
9.b. Sheetflow to Conservation Area with C/D Soils (Spec #2)	conserved open space	50% runoff volume reduction for treated area			0	0	0	0							0					
1	turf acres draining to conserved open space	50% runoff volume reduction for treated area 50% runoff reduction volume for treated area	0.75	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0 0	0.00	0.00	0.00	0.00	
9.c. Sheetflow to Vegetated Filter	turf acres draining to conserved open space impervious acres draining to filter strip	reduction for treated area 50% runoff volume reduction for treated area 50% runoff reduction volume for treated area 50% runoff volume reduction for treated area	0.75	0.00	0 0	0	0	0 0	0.00	0.00	0.00	0.00			0 0 0	0.00	0.00	0.00	0.00	
	turf acres draining to conserved open space impervious acres draining to	reduction for treated area 50% runoff volume reduction for treated area 50% runoff reduction volume for treated area 50% runoff volume	0.75 0.50	0.00 0.00 0.00 0.00	0 0	0 0	0 0	0 0 0	0.00	0.00	0.00	0.00			0 0 0 0	0.00	0.00	0.00	0.00	
9.c. Sheetflow to Vegetated Filter	turf acres draining to conserved open space impervious acres draining to filter strip	reduction for treated area 50% runoff volume reduction for treated area 50% runoff reduction volume for treated area 50% runoff volume reduction for treated area 50% runoff reduction	0.75 0.50 0.50 0.50 0.50	0.00	0 0	0 0	0 0	0	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00 0.00			0 0 0 0	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00	
9.c. Sheetflow to Vegetated Filter	turf acres draining to conserved open space impervious acres draining to filter strip	reduction for treated area 50% runoff volume reduction for treated area 50% runoff reduction volume for treated area 50% runoff volume reduction for treated area 50% runoff reduction volume for treated area TOTAL IMPERVIOUS COVE	0.75 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00	0 0 0	0 0 0	0 0 0	0 0 0 0 0 0	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00 0.00			0 0 0	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00	
9.c. Sheetflow to Vegetated Filter	turf acres draining to conserved open space impervious acres draining to filter strip	reduction for treated area 50% runoff volume reduction for treated area 50% runoff reduction volume for treated area 50% runoff volume reduction for treated area 50% runoff reduction volume for treated area TOTAL IMPERVIOUS COVE	0.75 0.50 0.50 0.50 0.50 0.50 0.60 0.60 R TREATED (ac) AREA CHECK PHOSPHORUS RS	0.00 0.00 0.00 0.00 0.00 0.00 0.00	O O O O O O O O O O O O O O O O O O O	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0	0 0 0	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00 0.00			0 0 0 0 0	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00	
9.c. Sheetflow to Vegetated Filter	url acres draining to conserved one store impervious acres draining to filter strip auf acres draining to filter strip	reduction for treated areas 50% number of volume reduction for treated area 50% number features 50% number features 50% number features 50% number for treated area 50% number for treated area 50% number features 50% number features 70TAL TURF ARE TOTAL TURF ARE TOTAL TURF ARE TOTAL TURF ARE TOTAL TURF ARE	0.75 0.50 0.50 0.50 0.50 0.50 0.50 AREACHEGK PHOSPHORUS RI TOTAL	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	S IN D.A. B (Ibiyr)	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0	0 0 0	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00 0.00	METOGRAF AT	MOVAL FROM R	0 0 0 0 0 0 0 TOTAL	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00	
9.c. Sheetflow to Vegetated Filter	turf acres draining to conserved open space impervious acres draining to filter strip	reduction for treated areas 50% number of volume reduction for treated area 50% number features 50% number features 50% number features 50% number for treated area 50% number for treated area 50% number features 50% number features 70TAL TURF ARE TOTAL TURF ARE TOTAL TURF ARE TOTAL TURF ARE TOTAL TURF ARE	0.75 0.50 0.50 0.50 0.50 0.50 0.50 AREACHEGK PHOSPHORUS RI TOTAL	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	S IN D.A. B (Ibiyr)	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00 0.00	MINOCES II	MOVAL FROM R	0	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00	0.00	
Sheeffor to Vegetand Filter Step in A Spills or Compost Annobal BCUD Shits (Since E2 & #4)	surfaces disting to contented one store impervious acres disting to fitter store that acres disting to fitter store that acres disting to the store that acres distinguished the store that acres distinguished the store that acres distinguished that acres distinguished the store that acres distinguished that acres distinguish	Induction for treated states 50% neared varieties 5	0.75 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	S IN D.A. B (Ibiyr)	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0	0 0 0 0 0 0	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00 0.00	MITOGOLIU	EMOVAL FROM R	0	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00	0.00	
9.c. Sheetflow to Vegetated Filter	surfaces disting to contented one store impervious acres disting to fitter store that acres disting to fitter store that acres disting to the store that acres distinguished the store that acres distinguished the store that acres distinguished that acres distinguished the store that acres distinguished that acres distinguish	Induction for treated states 50% neared varieties 5	0.75 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	S IND.A. B (IbAvr) ALCULATIONS	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0	0 0 0 0	0.00	0.00 0.00 0.00 0.00 0.00	0.00	0.00	MITOGRA	MOVAL FROM R	0 0 0 TOTAL	0.00 0.00 0.00 0.00 0.00 0.00 RUNOFF REDUCTION PRACTICE	0.00 0.00 0.00 0.00 0.00	0.00	0.00	
Sheeffor to Vegetand Filter Step in A Spills or Compost Annobal BCUD Shits (Since E2 & #4)	surfaces disting to contented one store impervious acres disting to fitter store that acres disting to fitter store that acres disting to the store that acres distinguished the store that acres distinguished the store that acres distinguished that acres distinguished the store that acres distinguished that acres distinguish	Indicate for treated and SPI nord volume SPI n	0.75 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	S IND.A. B (IbAvr) ALCULATIONS	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	O O O O O O O O O O O O O O O O O O O	O O O O O O O O O O O O O O O O O O O	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	METAGODA E	MOVAL FROM R	0	0.00 0.00 0.00 0.00 0.00 0.00 RUNOFF REDUCTION PRACTICE	0.00 0.00 0.00 0.00 0.00	0.00	0.00 0.00 0.00 0.00 0.00	
9.c. Sheeffow to Vegetated Filter Step in A Solo or Composit Avenues BECO Sees (Step A See A See	and area during to contained better than the state of the	TOTAL DEPARTMENT OF THE CONTROL OF T	0.75 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	S IN D.A. B (Ib/vr) ALCULATIONS Volume from Upstream RR	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	O O O O O O O O O O O O O O O O O O O	O O O O O O O O O O O O O O O O O O O	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	METOGOSIA III	MOVAL FROM B	0 0 0 TOTAL UNOFF REDU	0.00 0.00 0.00 0.00 0.00 0.00 RUNOFF REDUCTION PRACTICE	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00	0.00	
Decirion to Vegatated Filter Brisp in A Bolis or Composit Avended BLCD Bolis or Composit Avended BLCD Bolis (Bolis PE & 441) Apply Practices that Remerates Practice Practice Practice Practice Practice Practice	and area during to contained better than the state of the	TOTAL DEPARTMENT OF THE CONTROL OF T	0.75 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	S IND.A. B (IbAvr) ALCULATIONS	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q	O O O O O O O O O O O O O O O O O O O	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	METROGOS AS	MOVAL FROM R	0 0 0 TOTAL UNOFF REDU	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00	0.00 0.00 0.00 0.00 0.00	
Decirion to Vegatated Filter Brisp in A Bolis or Composit Avended BLCD Bolis or Composit Avended BLCD Bolis (Bolis PE & 441) Apply Practices that Remerates Practice Practice Practice Practice Practice Practice	or a see during to constant access the see during to the see during t	TOTAL DEPARTMENT OF THE CONTROL OF T	0.75 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Volume from Upstream RR Practice (cf)	0 0 0 0 0.00 0.00 Ruedicion (cf)			0.00 0.00 0.00 0.00 0.00 0.00 0.00 Phospionis Load from Upstream RR Practices (bis)	0.00 0.00 0.00 0.00 0.00 0.00 0.00 Unitreased Phosphorus Load to Practice (Bo.)	0.00 0.00 0.00 0.00 0.00 0.00 Phosphorus Removed By Practice (bit.)	0.00 0.00 0.00 0.00 0.00 0.00	METROGES or Countries Transment to be Employed	MOVAL FROM R	O O O O O O O O O O O O O O O O O O O	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	
O.: Direction to Vegatated Filled Brigh in A Date of Composit Amenda BLCC Seas (Steel Carlot Affect Bright S	of area during to contract does take a specific or the state of the st	Indicates the treated area followed by the control of the control	0.75 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	SIND.A. B (Ibiyr) ALCULATIONS Volume from Upstream RR Practice (cf)	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0	20	0.00 0.00 0.00 0.00 0.00 0.00 0.00 Phosphorus Lead from Practices (ba)	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 Phosphorus Removed By Practice (bs.)	0.00 0.00 0.00 0.00 0.00 0.00	Downstream Treatment to be Employed	MOVAL FROM R	O O O O O O O O O O O O O O O O O O O	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 Remaining Nirogen Load (bs.)	
Develor to Vegetand Filter to Page 1 Act of Company Act of Co	or area desired to the state of	Indicates the treated area followed in the control of the control followed in the control of the control followed in the control of the control followed in the control follow	0.75 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	ALCULATIONS Volume from Upstream RR Practice (cf)	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0	20	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 Phosphorus Removed By Practice (bs.)	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Downstream Treatment to be Employed	MOVAL FROM B	O O O O O O O O O O O O O O O O O O O	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 Remaining Nirogen Load (bs.)	
9.c. Sheeffow to Vegatated Filter Too p in A fable of Compan American RECO. Solid of Compan American RECO. Solid of Compan American RECO. Solid of Compan American Apply Practices that Rem Practice 10. Wet Swele (Coastal Plain) 10.a. Wet Swele #1 (Socc #11) 10.b. Wet Swele #1 (Socc #11)	und nove desiring to content accordance acco	Indicates the treated area followed in the control of the control followed in the control of the control followed in the control of the control followed in the control follow	0.75 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Volume from Upstream RR Practice (cf)	0.00 0.00 0.00 Runoff Reduction (cf) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	0	20 20 40	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Unitreases Phosphorus Practice (Bas) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	Phosphorus Removed by Practice (bs.)	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Demotrace Teatment to be England	MOVAL FROM IN	O O O O O O O O O O O O O O O O O O O	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	
9.c. Sheeffow to Vegatated Filter Too p in A fable of Compan American RECO. Solid of Compan American RECO. Solid of Compan American RECO. Solid of Compan American Apply Practices that Rem Practice 10. Wet Swele (Coastal Plain) 10.a. Wet Swele #1 (Socc #11) 10.b. Wet Swele #1 (Socc #11)	or area desired to the state of	Indicate the treated area 50% unrull reduction 1074 UNIVERSE NOTAL INFERIOR UNIVERSE NOTAL INFERIOR UNIVERSE 00% unrull volume unduction 00% unrull volume unduction 50% unrull volume unduction	0.75 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Volume from Upstream RR Practice (cf)	0.00 0.00 0.00 0.00 Runoff Reduction (cf)	0	20 20 40 40	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Untreased Phonoles Proceed to Practice (Ba.)	0.00 0.00 0.00 0.00 0.00 0.00 0.00 Phosphorus Preside (bs.) 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 Remaining Phospherus Load (8x-) 0.00 0.00	METROPICA DE L'ANTINOMINA DE BENGINANO DE CONTRACTOR DE L'ANTINOMINA DE L'ANTI	MOVAL FROM R	O O O O O O O O O O O O O O O O O O O	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.000 0.00 0.00 0.00 0.00 0.00 0.00 0.	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	
9.c. Diseafour to Vegatand Filter Torop in Asia or Company Amenda Maria Sala or Company Amenda Maria Sa	und nove desiring to contract account of the contract	Indicates the treated area for indicates the research area for indicates and research area.	0.75 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Volume from Upstream RR Practice (cf)	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0	20 20 40 40	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Downstream Treatment to be Employed	MOVAL FROM R	TOTAL NOT PRODU	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	
9.c. Sheeffow to Vegatated Filter Too p in A fable of Compan American RECO. Solid of Compan American RECO. Solid of Compan American RECO. Solid of Compan American Apply Practices that Rem Practice 10. Wet Swele (Coastal Plain) 10.a. Wet Swele #1 (Socc #11) 10.b. Wet Swele #1 (Socc #11)	und nove desiring to contract account of the contract	Indicates for treated area feet feet for treated area for treated area for treated area for the feet feet for the feet feet feet feet feet feet feet	0.75 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	S N D.A. B Blobyt AL CULATIONS Volume from Upstream RR Practice (d) 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0	20 20 40 40 60	Proceptions Proceptions Proceptions Upstream RR Practices (but) 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Phosphorus Practice (bs.) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Nematinas Transact to to Employed	MOVAL FROM B	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	
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S. Divertion to Vegetated Filter the park of this or Compact Avendant Temp in A folio or Compact Avendant Temp in A folio or Compact Avendant Temp in A folio or Compact Avendant Temp in Apply Practices that Remm Practice 10. West Swele (Coastal Plain) 10. A. West Swele (Coastal Plain) 11. Filtering Practices 11. A. Filtering Practice #1 (Spec #12)	of a cost desiring to a contract and a cost desiring to a cost desiring to the action of the action	Indicates the treated area for including the relation of the resident and solution for sealing the relation of the relation of the resident and resident of the resident and resident for treated area for the resident and resident of the resident and resident of the resident and resident of the resident and resident a	0.75 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	S N D.A. B Globyt ALCULATIONS Volume from Upstream RR Practice (d) 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	20 20 40 40 40 60 60 65 65	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Coversitives Treatment to be Employed	MOCKAL FROM B	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	000 000 000 000 000 000 000 000 000 00	
Develope to Vegerand Filter Imp a K 20% or Corrops Amenda Research Res	und nove desiring to contention accordance proposed accordance propos	Indicates the treated area for including the relation of the resident and solution for sealing the relation of the relation of the resident and resident of the resident and resident for treated area for the resident and resident of the resident and resident of the resident and resident of the resident and resident a	0.75 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	S N D.A. B Globyt ALCULATIONS Volume from Upstream RR Practice (d) 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	20 20 40 40 40 60 60 65 65	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Donatirani Tratined to be Employed	NOVA TOM S	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	
Develope to Vegerand Filter Imp a K 20% or Corrops Amenda Research Res	Market desiring to the strong control of the	Indicates the treated area for including the relation to the research area for including the relation to the research area for including the research area for	0.75 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	S N D.A. B Bloker ALCULATIONS Volume from Upstream RR Practice (u) 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	20 20 40 40 40 60 60 65 65	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Countries Trainings to be Employed	55073.75081	TOTAL NO. O. O	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	
S. Diserior to Vegezado Filar Brop & R. Sila et Corpos Amenda Brop & Sila et Corpos Amenda Brop & R. Sila et Corpos Amenda Brop & R. Sila et Corpos Brondo Brop & R. Sila et Corpos Brop Brondo Brop Brondo Brop Brondo Brond	Met acces desiring to improvious access desiring to the series of the se	Indicates the treated area for included in the related area for in	0.75 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	S N D.A. B Bloker ALCULATIONS Volume from Upstream RR Practice (u) 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	20 20 40 40 40 60 65 65 65	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Donastream Treatment to be Employed	300/AL 78/08 B	10. Wet Sv 53 35 35 36 11. Filtering 45 12. Construction 55 55 55 55 55 55 55 55 55 55 55 55 55	DOMESTIC RECORD OF THE PROPERTY OF THE PROPERT	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	
B. Deerfow to Vegezand Filter for the Act of Company Area (Act of Company Area) (Act of Company Area (Act of Company Area (Act of Company Area) (A	Market desiring to the strong control of the	Indicates the treated area for included in the related area for in	0.75 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	S N D.A. B Bloker ALCULATIONS Volume from Upstream RR Practice (u) 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	20 20 40 40 40 60 65 65 65	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Coversification Treatment to be Employed.	NOVA FORM	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	DOMESTIC RECORD OF THE PROPERTY OF THE PROPERT	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	

		cres draining to pond	0% runoff vo	olume reduction	0.00	0.00	0	0	0	45	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00	
13.b. Wet Pond #1 (Coastal Plain) (Spec #14)	turf acres drain	ning to wet pond	0% runoff vo	olume reduction	0.00	0.00	0	0	0	45	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00	
		cres draining to	095 cupoff ur	olume reduction	0.00	0.00	0	0	0	76	0.00	0.00	0.00	0.00		40	0.00	0.00	0.00	0.00	
13.c. Wet Pond #2 (Spec #14)						0.00	^	0		76	0.00	0.00	0.00	0.00		40	0.00	0.00	0.00	0.00	
100.110.7010.7010.7010.71177	impervious ac			niume reduction	0.00	0.00	0	0	0	65	0.00	0.00	0.00	0.00		30	0.00	0.00	0.00	0.00	
13.d. Wet Pond #2 (Coastal Plain) (Spec #14)		ning to wet pond			0.00	0.00	^	0		05	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00	
(SORC #14)	ion acres drain	and so was some	OS IGIGII V	auma racocioni	0.00	0.00	v		Ů	- 60	0.00	0.00	0.00	0.00		- 30	0.00	0.00	0.00	0.00	
14. Manufactured BMP																14. Manufa	ctured BMP				
		cres draining to vice	0% runoff vo	olume reduction	0.00	0.00	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	
14. Insert Name of Device	turf acres dra	ining to device	0% runoff vo	olume reduction	0.00	0.00	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	
						0.00															
				RVIOUS COVER		0.00															+-
					AREA CHECK	OK.															-
		PHOSPHORUS	REMOVAL R	Y PRACTICES T	HAT DO NOT R	EDUCE RUNOFF V	OLUME IN D.A. B.	0.00													-
						PHORUS REMOVA		0.00													$\overline{}$
	SEE	WATER QUA	LITY COMP	PLIANCE TAB	FOR SITE C	OMPLIANCE CA	ALCULATIONS														
	-	 	\vdash	1		-	-	-	-			-	 	 	-				-		+
		NITROGEN	REMOVAL B	Y PRACTICES T	HAT DO NOT R	EDUCE RUNOFF V	OLUME IN D.A. B	0.00						1							
					TOTAL N	TROGEN REMOVA	L IN D.A. B (lb/yr)	0.00													

Drainage Area C				Г		1		1			Г	1							1	1 1		1
Drainage Area C Land Cover (acres	s).																					
Forest/Open Space (acres) Managed Turf (acres)	0.00 0.00	0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00	0.00 0.00																	
Impervious Cover (acres)	0.00	0.00	0.00 0.00 Total	0.00	0.00		Post Develo	pment Treatme	nt Volume (cf)	0												
Apply Runoff Reduction P	Practices to R	Reduce Tre	eatment Volume & P		oment Load i	in Drainage A			VOIDING (CI)													
						Volume from Upstream RR	Runoff Reduction	Remaining Runoff		Phosphorus Load from Upstream RR	Untreated Phosphorus Load to	Phosphorus Removed By	Remaining Phosphorus				Nitrogen Efficiency	Nitrogen Load from Upstream RR Practices	Untreated Nitrogen Load	Nitrogen Removed By Practice	Remaining Nitrogen Load	
Practice	Unit	t	Description of Credit	Credit	Credit Area (acres)	Practice (cf)	(cf)	Volume (cf)	Efficiency (%)	Practices (lbs)	Practice (lbs.)	Practice (lbs.)	Load (lbs.)	Downstream Treatm	nent to be Employed		rsa	(Ibs)	Nitrogen Load to Practice (lbs.)	(lbs.)	(lbs.)	
1. Vegetated Roof			45% runoff volume														1. Green R					
1.a. Vegetated Roof #1 (Spec #5)	acres of ore	een roof	reduction 60% runoff volume	0.45	0.00	0	0	0	0	0.00	0.00	0.00	0.00				0	0.00	0.00	0.00	0.00	
1.b. Vegetated Roof #2 (Spec #5)	acres of gre	een roof	reduction	0.60	0.00	0	0	0	0	0.00	0.00	0.00	0.00				0	0.00	0.00	0.00	0.00	
2. Rooftop Disconnection																	2. Impervio	ous Surface Dis	sconnection			
2.a. Simple Disconnection to A/B Soils (Spec #1)	impervious acres	disconnected	50% runoff volume reduction for treated area	0.50	0.00	0	0	0	0	0.00	0.00	0.00	0.00				0	0.00	0.00	0.00	0.00	
2.b. Simple Disconnection to C/D Soils (Spec #1)	impervious acres	disconnected	25% runoff volume reduction for treated area	0.25	0.00	0	0	0	0	0.00	0.00	0.00	0.00				0	0.00	0.00	0.00	0.00	
2.c. To Soil Amended Filter Path as per specifications (existing C/D soils)			50% runoff volume	0.50						0.00	0.00	0.00						0.00	0.00			
(Spec #4) 2.d. To Dry Well or French Drain #1 (Microinfilration #1) (Spec #8)	THERETWOOD SECTION	discorrected	reduction for treated area 50% runoff volume reduction for treated area	0.50	0.00	0	0	0	26	0.00	0.00	0.00	0.00				15	0.00	0.00	0.00	0.00	
2.e. To Dry Well or French Drain #2 (Micro.Infiltration #2) (Spec #8)	Impervious acres	discorrected	90% runoff volume	0.90	0.00	0	0	0	26	0.00	0.00	0.00	0.00				15	0.00	0.00	0.00	0.00	
2.f. To Rain Garden #1 (Micro- Bioretention #1) (Spec #9)	impervious acres	disconnected	reduction for treated area	0.40	0.00				25	0.00	0.00	0.00	0.00				40	0.00	0.00	0.00	0.00	
2.o. To Rain Garden #2 (Micro-	impervious acres	asconnected	40% of volume captured 80% runoff volume		0.00	-	-	-		0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00	
Bioretention #2) (Spec #9) 2.h. To Rainwater Harvesting (Spec	impervious acres	disconnected	reduction for treated area based on tank size and design spreadsheet (See	0.80	0.00	0	0	0	50	0.00	0.00	0.00	0.00				60	0.00	0.00	0.00	0.00	
#6)	impervious acre	res captured		0.00	0.00	0	0	0	0	0.00	0.00	0.00	0.00				0	0.00	0.00	0.00	0.00	
2.i. To Stormwater Planter (Urban Bioretention) (Spec #9. Appendix A)	impervious acres	disconnected	40% runoff volume reduction for treated area	0.40	0.00	0	0	0	25	0.00	0.00	0.00	0.00		<u> </u>		40	0.00	0.00	0.00	0.00	
3. Permeable Pavement																	3. Permeat	ole Pavement				
3.a. Permeable Pavement #1 (Spec	acres of permeat + acres of "e	ble pavement 'external'	45% runoff volume																			
97) 3.b. Permeable Pavement #2 (Spec	(upgradient) in	impervious	reduction 75% runoff volume	0.45	0.00	0	0	0	25	0.00	0.00	0.00	0.00				25	0.00	0.00	0.00	0.00	
¥7)	acres of permeat	ble payement	reduction	0.75	0.00	0	0	0	25	0.00	0.00	0.00	0.00				25	0.00	0.00	0.00	0.00	╘
4. Grass Channel																	4. Grass Cl	hannel				
4.a. Grass Channel A/B Soils (Spec	impervious acres grass cha		20% runoff volume reduction	0.20	0.00	0	0	0	15	0.00	0.00	0.00	0.00				20	0.00	0.00	0.00	0.00	oxdot
#3)	turf acres draini channe	ning to grass	20% runoff volume reduction	0.20	0.00	0	0	0	15	0.00	0.00	0.00	0.00				20	0.00	0.00	0.00	0.00	L
l.b. Grass Channel C/D Soils (Spec #3	impervious acres grass cha	es draining to annels	10% runoff volume reduction	0.10	0.00	0	0	0	15	0.00	0.00	0.00	0.00				20	0.00	0.00	0.00	0.00	L
	turf acres draini channe	ning to grass nels	10% runoff volume reduction	0.10	0.00	0	0	0	15	0.00	0.00	0.00	0.00				20	0.00	0.00	0.00	0.00	L
4.c. Grass Channel with Compost Amended Soils as per specs (see Spec #4)	impervious acres grass cha	as draining to	30% runoff volume reduction	0.30	0.00	0	0	0	15	0.00	0.00	0.00	0.00				20	0.00	0.00	0.00	0.00	L
Spec #4)	turf acres draini	ning to grass	30% runoff volume reduction	0.30	0.00	0	0	0	15	0.00	0.00	0.00	0.00				20	0.00	0.00	0.00	0.00	
	-								,,,													
5. Dry Swale	impervious acres	as draining to	40% runoff volume														5. Dry Swa					
5.a. Dry Swale #1 (Spec #10)	dry swi	rale	reduction 40% runoff volume	0.40	0.00	0	0	0	20	0.00	0.00	0.00	0.00				25	0.00	0.00	0.00	0.00	
	turf acres draining impervious acres		reduction 60% runoff volume	0.40	0.00	0	0	0	20	0.00	0.00	0.00	0.00				25	0.00	0.00	0.00	0.00	
5.b. Dry Swale #2 (Spec #10)	dry sw	vale	reduction 60% runoff volume	0.60	0.00	0	0	0	40	0.00	0.00	0.00	0.00				35	0.00	0.00	0.00	0.00	
	turf acres draining	g to dry swale	reduction	0.60	0.00	0	0	0	40	0.00	0.00	0.00	0.00				35	0.00	0.00	0.00	0.00	_
6. Bioretention																	6. Bioreten	ntion				
6.a. Bioretention #1 or Urban	impervious acres bioreten	es draining to	40% runoff volume reduction	0.40	0.00	0	0	0	25	0.00	0.00	0.00	0.00				40	0.00	0.00	0.00	0.00	
Bioretention (Spec #9)	turf acres do bioreten	raining to	40% runoff volume reduction	0.40	0.00	0	0	0	25	0.00	0.00	0.00	0.00				40	0.00	0.00	0.00	0.00	
6.b. Bioretention #2 (Spec #9)	impervious acres bioreten	es draining to	80% runoff volume reduction	0.80	0.00	0	0	0	50	0.00	0.00	0.00	0.00				60	0.00	0.00	0.00	0.00	
(1,111)	turf acres do bioreten	raining to	80% runoff volume reduction	0.80	0.00	0	0	0	50	0.00	0.00	0.00	0.00				60	0.00	0.00	0.00	0.00	
7. Infiltration																						
1	impervious acres	as draining to	50% runoff volume														7. Infiltratio) II				
7.a. Infiltration #1 (Spec #8)	impervious acres infiltrati	as draining to tion	50% runoff volume reduction 50% runoff volume	0.50	0.00	0	0	0	25	0.00	0.00	0.00	0.00				15	0.00	0.00	0.00	0.00	
	turf acres draining	o to infiltration	reduction 50% runoff volume reduction 90% runoff volume	0.50	0.00	0	0	0	25 25	0.00	0.00	0.00	0.00				15	0.00	0.00	0.00	0.00	
7.a. Infiltration #1 (Spec #8) 7.b. Infiltration #2 (Spec #8)	turf acres draining impervious acres infiltrati	o to infiltration as draining to tion	reduction 50% runoff volume reduction	0.50	0.00	0	0	0	25 25 25	0.00	0.00	0.00	0.00				15 15	0.00	0.00	0.00	0.00	
	turf acres draining	o to infiltration as draining to tion	50% runoff volume reduction 90% runoff volume reduction	0.50	0.00 0.00 0.00	0 0	0 0	0 0	-	0.00	0.00	0.00	0.00				15	0.00	0.00	0.00	0.00	
	turl acres draining impervious acres infiltrati turl acres draining	to to infiltration as draining to tion to to infiltration.	50% runoff volume reduction 90% runoff volume reduction	0.50	0.00 0.00 0.00	0 0	0 0 0	0	-	0.00	0.00	0.00	0.00				15 15 15	0.00	0.00	0.00	0.00	
7.b. Infiltration #2 (Spec #8)	turf acres draining impervious acres infiltrati	to to infiltration as draining to tion to to infiltration.	50% runoff volume reduction 90% runoff volume reduction	0.50	0.00 0.00 0.00 0.00	0 0 0	0 0 0	0 0 0	-	0.00	0.00	0.00	0.00				15 15 15	0.00	0.00	0.00	0.00	
7.b. Infiltration #2 (Spec #8) 8. Extended Detention Pond	terf acres draining impervious acres inflitrati terf acres draining impervious acres ED terf acres draining	to infiltration. In to infiltration In the infiltration In to infiltration In the infiltr	reduction 50% nanoff volume reduction 90% nanoff volume reduction 90% nanoff volume reduction 00% nanoff volume reduction	0.50 0.90 0.90	0.00 0.00 0.00 0.00	0 0 0	0 0 0	0 0 0	-	0.00	0.00	0.00	0.00				15 15 15	0.00 0.00 0.00	0.00 0.00 0.00	0.00	0.00	
7.b. Infiltration #2 (Spec #8) 8. Extended Detention Pond	turl acres draining impervious acres infiltrati turl acres draining impervious acres ED	to infiltration. In to infiltration In the infiltration In to infiltration In the infiltr	reduction 50% nunoff volume reduction 90% nunoff volume reduction 90% nunoff volume reduction 90% nunoff volume reduction 0% nunoff volume reduction 15% nunoff volume reduction	0.50 0.90 0.90	0.00	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0	0 0 0	25 25 25	0.00	0.00	0.00	0.00				15 15 15 15 15 8. Extende	0.00 0.00 0.00 d Detention Po	0.00 0.00 0.00	0.00	0.00	
7.b. infiltration \$2 (Spec #8) 8. Extended Detention Pond 8.a. ED #1 (Spec #15)	terf acres draining impervious acres inflitrati terf acres draining impervious acres ED terf acres draining	a to infiltration as draining to sion a to infiltration as draining to as draining to ining to ED as draining to	reduction 50% nanoff volume reduction 90% nanoff volume reduction 90% nanoff volume reduction 00% nanoff volume reduction	0.50 0.90 0.90	0.00	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	25 25 25 16 15	0.00	0.00	0.00	0.00				15 15 15 15 8. Extended	0.00 0.00 0.00 d Detention Po	0.00 0.00 0.00	0.00	0.00	
7.b. Inflatation #2 (Spec #8) 8. Extended Detention Pond 8.a. ED #1 (Spec #15) 8.b. ED #2 (Spec #15)	interior turf acres drainin impervious acres impervious acres impervious acres ED turf acres drainin impervious acres ED turf acres drain impervious acres ED turf acres drain	a to infiltration as draining to sion a to infiltration as draining to as draining to ining to ED as draining to	reduction reduction reduction 90% reach volume reduction 90% runoff volume reduction 15% runoff volume reduction 15% runoff volume reduction	0.50 0.90 0.90 0.90	0.00 0.00 0.00	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	25 25 25 15 15	0.00	0.00	0.00	0.00				15 15 15 15 15 8. Extende 10 10	0.00 0.00 0.00 d Detention Po 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	
7.b. infiltration \$2 (Spec #8) 8. Extended Detention Pond 8.a. ED #1 (Spec #15)	impervious acres conservious impervious acres conservious	a to infiltration a to infiltration to	reduction reduction reduction 90% reach volume reduction 90% runoff volume reduction 15% runoff volume reduction 15% runoff volume reduction	0.50 0.90 0.90 0.90	0.00 0.00 0.00	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	25 25 25 15 15	0.00	0.00	0.00	0.00				15 15 15 15 15 10 10 10 10	0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	
7.b. Inflatation #2 (Spec #8) 8. Extended Distertion Pond 8.a. ED #1 (Spec #16) 8.b. ED #2 (Spec #16) 9. Sheestflow to Filter/Open Sp	impervious acres draining impervious acres d	a to infiltration a to infiltration to	reduction 50% nunoff volume reduction 90% nunoff volume reduction 90% reduction 90% reduction 90% reduction 90% reduction 90% reduction 90% nunoff volume reduction 15% nunoff volume reduction 15% nunoff volume reduction 15% nunoff volume reduction	0.50 0.90 0.90 0.90 0.00 0.00 0.15	0.00	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	25 25 25 15 15	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00				15 15 15 15 15 10 10 10 10	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00	
7.b. Inflatation #2 (Spec #8) 8. Extended Detention Pond 8.a. ED #1 (Spec #15) 8.b. ED #2 (Spec #15)	impervious acres conservious impervious acres conservious	a to infiltration to to infiltration to some time to to infiltration to to the total to the total to the total t	reduction reduction SON most volume reduction TON most volume TON most volume TON most volume TON most volume TON most vol	0.50 0.90 0.90 0.00 0.00 0.15 0.15	0.00	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	25 25 25 15 15	0.00	0.00	0.00	0.00				15 15 15 15 15 10 10 10 10	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00	
7.b. Inflatation #2 (Spec #8) 8. Extended Distertion Pond 8.a. ED #1 (Spec #16) 8.b. ED #2 (Spec #16) 9. Sheestflow to Filter/Open Sp	wind acres districts impervious acres im	a to infiltration a to infiltration to to infiltration to to to infiltration to to to infiltration to to to infiltration t	reduction reduction SOS model volume solution SOS model volume solution SOS model volume solution SOS model volume solution SOS model volume reduction SOS model volume reduction SOS model volume reduction SOS model volume reduction TOS model volume reduction TOS model volume reduction TOS vondit volume reduction TOS vondit volume reduction SOS model volume SOS solution SOS soluti	0.50 0.90 0.90 0.00 0.00 0.15 0.15	0.00	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0	0	25 25 25 15 15	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00	0.00				15 15 15 15 15 10 10 10 10	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00	
7.b. Infersion #2 (Spec #8) 8. Extended Detention Fond 8.a. ED #1 (Spec #15) 8.b. ED #2 (Spec #15) 9. Sheestlow to Conservation Assamble And Sold Rises #2 8.b. Sheeffor to Conservation Assamble And Sold Rises #2	uniform with the control of the cont	as to infiltration as draining to the section of th	reduction solution volume solution for volume solution solution and volume solution	0.50 0.90 0.90 0.00 0.00 0.15 0.15	0.00 0.00 0.00 0.00 0.00 0.00	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	25 25 25 15 15	0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00	000 000 000 000 000 000 000 000				15 15 15 15 15 10 10 10 10	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00	
7.b. Inflatation #2 (Spec #8) 5. Extended Detention Fond 6.a. ED #1 (Spec #15) 8.b. ED #2 (Spec #15) 9. Sheetflow to Filter/Doen Sco 9. Sheetflow to Conservation Area with Aff Sold (Spec #15) 9.b. Sheetflow to Conservation Area with Coff Sold (Spec #15) 9.b. Sheetflow to Conservation Area with Coff Sold (Spec #15)	set acres district improvious acres impr	as to infiltration is desiring to a to infiltration is desiring to a to infiltration as desiring to a to infiltration as desiring to as desiring to ED inning to	reduction solution of volume SON uncert volume SON uncert volume reduction for treated area reduction SON uncert volume reduction for treated area SON uncert volume SON	0.50 0.90 0.90 0.00 0.00 0.15 0.15	0.00	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			25 25 25 15 15	0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00				15 15 15 15 15 10 10 10 10	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00	
7.b. Inflication 42 (Spac #8) 5. Extended Detention Fond 8.a. ED #1 (Spac #15) 8.b. ED #2 (Spac #15) 9. Sheetiflow to Filter/Coen Sit 9.a. Sheetiflow to Filter/Coen Sit 9.a. Sheetiflow to Filter/Coen Sit 9.b. Sheetiflow to Site Site Site 9.b. Sheetiflow to Site Site Site Site Site Site Site Site	uniform with the control of the cont	as to infiltration is draining to to infiltration as draining to to infiltration as draining to to infiltration as draining to ED inning to ED innin	endediction subdiction subdiction 50% nord volume subdiction 50% nord volume nederation 50% nord volume nederation 50% nord volume nederation 50% nord volume nederation 50% nord volume 70% nord volume 70% nord volume 70% nord volume 50% nord volume	0.50 0.90 0.90 0.00 0.00 0.15 0.15	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		25 25 25 15 15	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	000 000 000 000 000 000 000 000				15 15 15 15 15 10 10 10 10	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00	
7.b. Inflatation #2 (Spec #8) 5. Extended Detention Fond 6.a. ED #1 (Spec #15) 8.b. ED #2 (Spec #15) 9. Sheetflow to Filter/Doen Sco 9. Sheetflow to Conservation Area with Aff Sold (Spec #15) 9.b. Sheetflow to Conservation Area with Coff Sold (Spec #15) 9.b. Sheetflow to Conservation Area with Coff Sold (Spec #15)	set acres district impervious acres impe	as to infiltration is draining to to infiltration as draining to to infiltration as draining to to infiltration as draining to ED inning to ED innin	endediction subdiction subdiction 50% nord volume subdiction 50% nord volume nederation 50% nord volume nederation 50% nord volume nederation 50% nord volume nederation 50% nord volume 70% nord volume 70% nord volume 70% nord volume 50% nord volume	0.50 0.90 0.90 0.00 0.15 0.15 0.75 0.75 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	25 25 25 15 15	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	000 000 000 000 000 000 000 000				15 15 15 15 15 10 10 10 10	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00	
7.b. Inflatation #2 (Spec #8) 5. Extended Detention Fond 6.a. ED #1 (Spec #15) 8.b. ED #2 (Spec #15) 9. Sheetflow to Filter/Doen Sco 9. Sheetflow to Conservation Area with Aff Sold (Spec #15) 9.b. Sheetflow to Conservation Area with Coff Sold (Spec #15) 9.b. Sheetflow to Conservation Area with Coff Sold (Spec #15)	set acres district impervious acres impe	as to infiltration is draining to to infiltration as draining to to infiltration as draining to to infiltration as draining to ED inning to ED innin	enderliefen melectrien melectrien stelleriten stelleri	0.50 0.90 0.90 0.00 0.15 0.15 0.75 0.75 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	25 25 25 15 15	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	000 000 000 000 000 000 000				15 15 15 15 15 10 10 10 10	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00	
7.b. Inflatation #2 (Spec #8) 5. Extended Detention Fond 6.a. ED #1 (Spec #15) 8.b. ED #2 (Spec #15) 9. Sheetflow to Filter/Doen Sco 9. Sheetflow to Conservation Area with Aff Sold (Spec #15) 9.b. Sheetflow to Conservation Area with Coff Sold (Spec #15) 9.b. Sheetflow to Conservation Area with Coff Sold (Spec #15)	set acres district impervious acres impe	as to infiltration is draining to to infiltration as draining to to infiltration as draining to to infiltration as draining to ED inning to ED innin	enderliefen melectrien melectrien stelleriten stelleri	0.50 0.90 0.90 0.00 0.00 0.15 0.15 0.75 0.75 0.50 0.50 0.50 0.50 0.50 0.5	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	25 25 25 15 15	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	000 000 000 000 000 000 000				15 15 15 15 15 15 15 15 10 10 10 10 0 0 0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00	
7.b. Inflatation #2 (Spec #8) 5. Extended Detention Fond 6.a. ED #1 (Spec #15) 8.b. ED #2 (Spec #15) 9. Sheetflow to Filter/Doen Sco 9. Sheetflow to Conservation Area with Aff Sold (Spec #15) 9.b. Sheetflow to Conservation Area with Coff Sold (Spec #15) 9.b. Sheetflow to Conservation Area with Coff Sold (Spec #15)	and acress dealers are acress dealers and acress dealers are acress dealers are acress dealers are acress dealers are acress dealers and acress dealers are acress dealers and acress dealers and acress dealers are acress dealers and acress dealers and acress dealers are acress dealers and acress dealers are acress dealers are acress dealers are acress dealers and acress dealers are acress de	son to infiltration, or to infiltration, or to infiltration, or distinting to floor or to infiltration or infiltrati	enduction medication medication statistical solvent includes medication solvent includes solvent i	0.50 0.90 0.90 0.00 0.00 0.15 0.15 0.75 0.76 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.5	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	S IN D.A. C (b)	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	25 25 25 15 15	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	000 000 000 000 000 000 000		NETACOIS IS	SACVAL FROM 8	15 15 15 15 15 15 15 15 15 10 10 10 10 10 10 10 10 10 10 10 10 10	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00	
7.b. Inflatation #2 (Spec #8) 5. Extended Detention Fond 6.a. ED #1 (Spec #15) 8.b. ED #2 (Spec #15) 9. Sheetflow to Filter/Doen Sco 9. Sheetflow to Conservation Area with Aff Sold (Spec #15) 9.b. Sheetflow to Conservation Area with Coff Sold (Spec #15) 9.b. Sheetflow to Conservation Area with Coff Sold (Spec #15)	and acress dealers are acress dealers and acress dealers are acress dealers are acress dealers are acress dealers are acress dealers and acress dealers are acress dealers and acress dealers and acress dealers are acress dealers and acress dealers and acress dealers are acress dealers and acress dealers are acress dealers are acress dealers are acress dealers and acress dealers are acress de	son to infiltration, or to infiltration, or to infiltration, or distinting to floor or to infiltration or infiltrati	enderstein sederstein seders	0.50 0.90 0.90 0.00 0.00 0.15 0.15 0.75 0.76 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.5	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	S IN D.A. C (b)	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	25 25 25 15 15	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	000 000 000 000 000 000 000		2017-000-0	SMOVAL FROM R	15 15 15 15 15 15 15 15 15 10 10 10 10 10 10 10 10 10 10 10 10 10	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00	
7.b. Inflatation #2 (Spec #8) 5. Extended Detention Fond 6.a. ED #1 (Spec #15) 8.b. ED #2 (Spec #15) 9. Sheetflow to Filter/Doen Sco 9. Sheetflow to Conservation Area with Aff Sold (Spec #15) 9.b. Sheetflow to Conservation Area with Coff Sold (Spec #15) 9.b. Sheetflow to Conservation Area with Coff Sold (Spec #15)	and acress department of the contract of the c	bed	enderlies	0.50 0.90 0.90 0.90 0.00 0.00 0.15 0.15 0.75 0.75 0.50 0.50 0.50 0.50 0.50 0.5	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	S IN D.A. C (b)	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	25 25 25 15 15	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	000 000 000 000 000 000 000		MINOGEN	CMOVAL PROM 8	15 15 15 15 15 15 15 15 15 10 10 10 10 10 10 10 10 10 10 10 10 10	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00	
7.b. Inflication 42 (Spec #8) 8. Extended Datestion Fond 8.a. ED #1 (Spec #15) 8.b. ED #2 (Spec #15) 9.b. Sheetflow to Filter/Coten So 9.a. Sheetflow to Filter/Coten So 9.a. Sheetflow to Filter/Coten So 9.b. Sheetflow to Companyation Peac with All Sola (Spec #15) 9.b. Sheetflow to Companyation Peac with All Sola (Spec #15) 9.b. Sheetflow to Companyation Filter GUE Sola (Spec #15) 9.b. Sheetflow to Vappaside Filter BUCO Sola (Spec #2 A #6)	and acress department of the contract of the c	bed	enderlies	0.50 0.90 0.90 0.90 0.00 0.00 0.15 0.15 0.75 0.75 0.50 0.50 0.50 0.50 0.50 0.5	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	FION IN D.A. C (cf): S IN D.A. C (b/yr) ALCULATIONS	0 0.00	0 0 0 0 0	25 25 25 15 15 15 15 0 0 0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	000 000 000 000 000 000 000 000 000 00		NET COSEN IS	SSOVAL FROM 5	15	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	
7.b. Infersion #2 (Spec #8) 8. Extended Detention Pond 8.a. ED #1 (Spec #15) 8.b. ED #2 (Spec #15) 9.b. Sheetiflow to Filter/Open Str 9.a. Sheetiflow to Companyion Area 9.b. Sheetiflow to Vegopatine Filter 9.b. Sheetiflow to Vego	and acress department of the contract of the c	be obtained to infiltration of a starting to so distinct of a starting to so the starting to so distinct of a starting to so the starting	enderlies	0.50 0.90 0.90 0.90 0.00 0.00 0.15 0.15 0.75 0.76 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.5	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	S IN D.A. C (b)	0.00	0 0 0 0 0	25 25 25 25 15 15 15 15 0 0 0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Downstraam Treate	NITROGEN II	SOVAL FROM R	15 15 15 15 15 15 15 15 10 10 10 10 10 10 10 10 10 10 10 10 10	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	
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7.b. Infersion #2 (Spec #8) 8. Extended Detention Pond 8.a. ED #1 (Spec #15) 8.b. ED #2 (Spec #15) 9.b. Sheetiflow to Filter/Open Str 9.a. Sheetiflow to Companyion Area 9.b. Sheetiflow to Vegopatine Filter 9.b. Sheetiflow to Vego	In the second se	to inflation to in	enderlies metacione metacione solicitario solicitario	0.50 0.90 0.90 0.90 0.00 0.00 0.15 0.15 0.75 0.76 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.5	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	ALCULATIONS Volume from Upstream RR	0 0.00	Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q	25 25 25 25 15 15 15 15 0 0 0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Downstream Treats	NIFEOGRA to be Employed		15	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	
7.b. Infersion #2 (Spec #8) 8. Extended Detention Pond 8.a. ED #1 (Spec #15) 8.b. ED #2 (Spec #15) 9.b. Sheetiflow to Filter/Open Str 9.a. Sheetiflow to Companyion Area 9.b. Sheetiflow to Vegopatine Filter 9.b. Sheetiflow to Vego	but access deather than the conservation of th	to utilitation to utilitation to utilitation to utilitation to utilitation to utilitation and	enduction substitute s	0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	TION IN D.A. C (cf) S IN D.A. C (thoy) ALCULATIONS Volume from Upstream RR Practice (cf)	Q Q,QQ	O O O O O O O O O O O O O O O O O O O	25 25 25 25 25 25 25 25 25 25 25 25 25 2	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	000 000 000 000 000 000 000 000 000 00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	000 000 000 000 000 000 000 000 000 00	Ocean Track	NETHOGES IS	SOUR FROM B	15	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	
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7.b. Infersion #2 (Spec #8) 8. Extended Detention Pond 8.a. ED #1 (Spec #15) 9. Sheetiflow to Conservation Area with All Sols (Spec #15) 9. Sheetiflow to Conservation Area with All Sols (Spec #15) 9. Sheetiflow to Conservation Area with All Sols (Spec #15) 9. Sheetiflow to Conservation Area with All Sols (Spec #15) 9. Sheetiflow to Vegatated Filter BLCO Sols (Spec #2 # #8) 9. Sheetiflow to Vegatated Filter BLCO Sols (Spec #2 # #8) Apply Practices that Remn Practice 10. West Swales (Coassal Plate) 10. West Swales (Coassal Plate)	but access drawing to the conservation of the	to utilitate on ut	endediction medication statistical solventry statistical solventry solv	0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	TION NO.A. C. (cft. S IN D.A. C. (cft. S IN D.A. C. (cft. V) IN D.	Runoff Reduction (cf)	Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q	25 25 25 25 25 25 25 25 25 25 25 25 25 2	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	000 000 000 000 000 000 000 000 000 00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	000 000 000 000 000 000 000 000 000 00	Downstream Treats	NITROGEN to be Employed	20074, 1700 \$	15	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	
7.b. Inflatation #2 (Spec #8) 8. Extended Detention Fond 8.a. ED #1 (Spec #15) 8.b. ED #1 (Spec #15) 9.b. Sheed floor #15 9.a. Sheed floor #15 9.b. Sheed floor #15 10.b. Wet Swelle (Constell #15)	bet access death of the control of t	to infiliate the second of the	endediction subdiction subdiction 90% north volume reduction 15% north volume redu	0.50 0.50 0.50 0.50 0.50 0.55 0.75 0.75	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	THON ND A. C. (cf. S) IN D. A. C. (lib/r) ALCULATIONS Volume from Upstream RR Practice (cf) 0	Runoff Reduction (cf)	Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q	25 25 25 25 25 25 25 25 25 25 25 25 25 2	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	000 000 000 000 000 000 000 000 000 00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	000 000 000 000 000 000 000 000 000 00	Downstraam Treats	NFTGGEN II	GROOM, FERM IS	15 15 15 15 15 15 15 15 15 15 15 15 15 1	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	
7.b. Inflication #2 (Spec #8) 8. Extended Detention Pond 8.a. ED #1 (Spec #15) 9. Sheetiflow to Conservation Area with All Sold (Spec #15) 9. Sheetiflow to Conservation Area with All Sold (Spec #15) 9. Sheetiflow to Conservation Area with All Sold (Spec #15) 9. Sheetiflow to Conservation Area with All Sold (Spec #15) 9. Sheetiflow to Vegotated Filter BCCS Sold (Spec #2.4 #81) Apply Practices that Remo Practice 10. West Swells (Coastal Platn) 10. West Swells (Coastal Platn)	but access drawing to the content of	to infiliate the second of the	endediction subdiction subdiction 90% north volume reduction 15% north volume redu	0.50 0.50 0.50 0.50 0.50 0.55 0.75 0.75	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	THON ND A. C. (cf. S) IN D. A. C. (lib/r) ALCULATIONS Volume from Upstream RR Practice (cf) 0	Runoff Reduction (cf)	Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q	25 25 25 25 25 25 25 25 25 25 25 25 25 2	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	000 000 000 000 000 000 000 000 000 00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	000 000 000 000 000 000 000 000 000 00	Downstream President	NITROGEN II	CONTALTEGE	15 15 15 15 15 15 15 15 15 15 15 15 15 1	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	
7.b. Inflavoion #2 (Spac #8) 8. Extended Deternion Pond 8.a. ED #1 (Spac #16) 8.b. ED #2 (Spac #15) 8.b. ED #2 (Spac #15) 9.b. Sheetflow to Filter/Open Sp 9.b. Sheetflow to Filter/Open Sp 9.b. Sheetflow to Filter/Open Sp 9.b. Sheetflow to Conservation Area with OF Side Ribes #2 9.b. Sheetflow to Conserva	bet access death of the control of t	to infiliation to inf	endediction medication statistical solventry country observe reduction solventry observe reduction solventry observe reduction solventry solvent	0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00	THON ND A. C. (cf. S) IN D. A. C. (lib/r) ALCULATIONS Volume from Upstream RR Practice (cf) 0	Runoff Reduction (cf)	Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q	25 25 25 25 25 25 25 25 25 25 25 25 25 2	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	000 000 000 000 000 000 000 000 000 00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	000 000 000 000 000 000 000 000 000 00	Downstram Trade	INTROCES IN Employed	SOVAL TROS E	15 15 15 15 15 15 15 15 15 15 15 15 15 1	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	
7.b. Inflatation #2 (Spec #8) 8. Extended Detention Fond 8.a. ED #1 (Spec #15) 8.b. ED #1 (Spec #15) 9.b. Sheed floor #15 9.a. Sheed floor #15 9.b. Sheed floor #15 10.b. Wet Swelle (Constell #15)	bet access death of the control of t	to infiliate the control of the cont	endediction subdiction subdiction 90% north volume reduction 15% north volume redu	0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	INORAN DA. & Celh Carlon S. M. A. C. Celh Carlon S. M. C. Celh	Runoff Reduction (cf)	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	25 25 25 25 25 25 25 25 25 25 25 25 25 2	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	000 000 000 000 000 000 000 000 000 00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Downstream Treats	ANT PLOSEN II to be Employed	300004 15000	15 15 15 15 15 15 15 15 15 15 15 15 15 1	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	
7.b. Inflation #2 (Spec #8) 8. Extended Detention Fond 8.a. ED #1 (Spec #15) 8.b. ED #1 (Spec #15) 9.b. ED #2 (Spec #15) 9.b. Sheetilow to Fried Price Price 9.a. Sheetilow to Conservation Area with Coff Rate #2 9.b. Sheetilow to Conservation Area with Coff Rate #2 9.b. Sheetilow to Conservation Area with Coff Rate #2 9.b. Sheetilow to Conservation Area with Coff Rate #2 9.c. Sheetilo	Met acres desired in previous acres desired	book observable of the second	reduction metalicities statistical solve month volume solve mo	0.50 0.50 0.50 0.50 0.50 0.55 0.75 0.75	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	INOR NO RA. G (cft) ALCULATIONS Volume from Uppstream RR Practice (cf) 0 0 0	Runoff Reduction (cr)	O O O O O O O O O O O O O O O O O O O	25 25 25 25 15 15 15 15 15 15 15 15 15 15 15 15 15	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Downstream Treatment	NETHODIS II	00074, 27008	15 15 15 15 15 15 15 15 15 15 15 15 15 1	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	
7.b. Inflavoion #2 (Spec #8) 8. Extended Detention Pond 8.a. ED #1 (Spec #15) 8.b. ED #1 (Spec #15) 8.b. ED #2 (Spec #15) 9. Sheetilow to Friedrich Friedrich 9.a. Sheetilow to Friedrich Friedrich 9.a. Sheetilow to Communition Analestin Child Sold (Spec #15) 9.b. Sheetilow to Communition Analestin Child Sold (Spec #12) 9.b. Sheetilow to Communition Analestin Child (Spec #12) 9.b. Sheetilow	Met acres desired in previous acres desired	book observable of the second	endediction medication statistical solventry country observe reduction solventry observe reduction solventry observe reduction solventry solvent	0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	SINDA C GENT ACCULATIONS ALCULATIONS Volume from Uprinsen RR Practice (of) 0 0 0	Runoff Reduction (cf)	O O O O O O O O O O O O O O O O O O O	25 25 25 25 15 15 15 15 15 15 15 15 15 15 15 15 15	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	000 000 000 000 000 000 000 000 000 00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Countries Treat	NITROGEN II	ONYA TROSI	15	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	
7.b. Inflavoion #2 (Spec #8) 8. Extended Determition Pond 8.a. ED #1 (Spec #15) 8.b. ED #2 (Spec #15) 9.b. Sheetilors to Fuller/Orient Sch 9.a. Sheetilors to Fuller/Orient Sch 9.a. Sheetilors to Fuller/Orient Sch 9.b. Sheetilors to Fuller/Orient Sch 9.b. Sheetilors to Tupical Policy 10.b. Wat Swalls (Coostel Policy) 11.b. Filtering Practices 11.a. Filtering Practices 11.a. Filtering Practices 11.b. Filtering Practices	Let acres desired acres desire	body	enderlies selection	0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	INON ROLA CIGNOTON BY NOA CIGNOTON Volume from Upstream RR Practice (u) 0 0 0	Runoff Reduction (cr)	O O O O O O O O O O O O O O O O O O O	25 25 25 25 25 25 25 25 25 25 25 25 25 2	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	000 000 000 000 000 000 000 000 000 00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	000 000 000 000 000 000 000 000 000 00	Downstream Treatment	NIFECOSION to be Employed	Service From From Service Serv	15	o 000 0 000	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	
7.b. Inflavoion #2 (Spec #8) 8. Extended Detention Pond 8.a. ED #1 (Spec #15) 8.b. ED #1 (Spec #15) 8.b. ED #2 (Spec #15) 9. Sheetilow to Friedrich Friedrich 9.a. Sheetilow to Friedrich Friedrich 9.a. Sheetilow to Communition Analestin Child Sold (Spec #15) 9.b. Sheetilow to Communition Analestin Child Sold (Spec #12) 9.b. Sheetilow to Communition Analestin Child (Spec #12) 9.b. Sheetilow	Met acres desired in previous acres desired	body	reduction metalicities statistical solve month volume solve mo	0.50 0.50 0.50 0.50 0.50 0.50 0.55 0.55	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	PROBERT OF A CIPIC PROPERTY OF THE PROPERTY OF	Russoff Reduction (cr)	G G G G G G G G G G G G G G G G G G G	25 25 25 25 25 25 25 25 25 25 25 25 25 2	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	000 000 000 000 000 000 000 000 000 00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	000 000 000 000 000 000 000 000 000 00	Downstream Treats	NETHOGOS S	SOCIAL TROOP	15. 15. 15. 15. 15. 15. 16. Extended 10. 10. 10. 10. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	
7.b. Inflavoion #2 (Spec #8) 8. Extended Detention Pond 8.a. ED #1 (Spec #15) 8.b. ED #1 (Spec #15) 8.b. ED #2 (Spec #15) 9. Sheetilow to Friedrich Friedrich 9.a. Sheetilow to Friedrich Friedrich 9.a. Sheetilow to Communition Analestin Child Sold (Spec #15) 9.b. Sheetilow to Communition Analestin Child Sold (Spec #12) 9.b. Sheetilow to Communition Analestin Child (Spec #12) 9.b. Sheetilow	Let acres desired a consequence of the consequence	body both contributions to infiliations to infiliations to infiliations to infiliations to infiliations to infiliations to infiliation to in	reduction metalicities statistical solic month volume solic month solic mon	0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	PROBERT OF A CONTROL OF THE PROBE OF T	0 0.00 0.00 Runoff Reduction (cr) 0 0 0	Samaking Russian (c) Company C	25 25 25 25 25 25 25 25 25 25 25 25 25 2	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	000 000 000 000 000 000 000 000 000 00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Constrain Train	NITROGEN II	ONYATEGA	15	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	
7.b. Inflavoron #2 (Spac #8) 8. Extended Detention Fond 8.a. ED #1 (Spac #15) 8.b. ED #2 (Spac #15) 8.b. Edition to Filter/Open Space #3.b. Sheetflow to Consensation Area #3.b. Edition #3.b. Edition #3.b. #3.b.	Let access desired by the control of	bed by the state of the state o	enderlies selection	0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	PORNING A. G. (city) A. C. (cit	Russoff Reduction (cr)	G G G G G G G G G G G G G G G G G G G	25 25 25 25 25 25 25 25 25 25 25 25 25 2	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	000 000 000 000 000 000 000 000 000 00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	000 000 000 000 000 000 000 000 000 00	Downstream Treats	Tell Process to be Employed	200 / 100 /	15	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	
7.b. Inflavoron #2 (Spac #8) 8. Extended Detention Fond 8.a. ED #1 (Spac #15) 8.b. ED #2 (Spac #15) 8.b. Edition to Filter/Open Space #3.b. Sheetflow to Consensation Area #3.b. Edition #3.b. Edition #3.b. #3.b.	Let acres desired by the control of	bed by the state of the state o	reduction metalicities statistical solic month volume solic month solic mon	0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	PROBERT OF A CONTROL OF THE PROBE OF T	0 0.00 0.00 Runoff Reduction (cr) 0 0 0	Samaking Russian (c) Company C	25 25 25 25 25 25 25 25 25 25 25 25 25 2	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	000 000 000 000 000 000 000 000 000 00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Downstream Treats	NITROGEN II	GROOM, FERM IN	15	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	
7.b. Inflatation #2 (Spec #8) 8. Extended Detention Pond 8.a. ED #1 (Spec #15) 8.b. ED #2 (Spec #15) 9.b. Sheetflow to Conservation Area with All Sols (Rec. #2) 9.a. Sheetflow to Conservation Area with CH Sols (Rec. #2) 9.b. Sheetflow to Co	Met acres desired impervous ac	book of the second of the seco	enderstand methodistand methodistand statistical stat	0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	PORNING A. G. (city) A. C. (cit	0 0.00 0.00 Runoff Reduction (cr) 0 0 0	Samaking Russian (c) Company C	25 25 25 25 25 25 25 25 25 25 25 25 25 2	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	000 000 000 000 000 000 000 000 000 00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	000 000 000 000 000 000 000 000 000 00	Dominion Train	NITROGEN II	ONYATEGAL	15	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	
7.b. Inflication #2 (Spec #8) 8. Extended Deternion Pond 8.a. ED #1 (Spec #15) 8.b. ED #2 (Spec #15) 8.b. ED #2 (Spec #15) 9.b. Sheetflow to Filter/Open So 9.a. Sheetflow to Filter/Open So 9.a. Sheetflow to Filter/Open So 9.b. Sheetflow to Conservation Area with OF So So Riber #2 9.b. Sheetflow to Conservation Area with OF So So Riber #2 9.b. Sheetflow to Conservation Area with OF So So Riber #2 9.b. Sheetflow to Conservation Area with OF So So Riber #2 9.b. Sheetflow to Conservation Area with OF So So Riber #2 9.b. Sheetflow to Conservation Area with OF So So Riber #2 9.b. Sheetflow to Conservation Area with OF So Riber #2 9.b. Sheetflow to Conservation Area #4.b. Conservation Area #4.b. Sheetflow to Co	Let access desired by the control of	book of the second of the seco	enderstand methodistand methodistand statistical stat	0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	PORNING A. G. (city) A. C. (cit	0 0.00 0.00 Runoff Reduction (cr) 0 0 0	Samaking Russian (c) Company C	25 25 25 25 25 25 25 25 25 25 25 25 25 2	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	000 000 000 000 000 000 000 000 000 00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	000 000 000 000 000 000 000 000 000 00	Downstram Treat	NOT TO be Employed	GROVAL FROM A	15	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	
7.b. Infersion #2 (Spec #8) 8. Extended Detention Pond 8.a. ED #1 (Spec #15) 8.b. ED #2 (Spec #15) 8.b. ED #2 (Spec #15) 9. Sheetflow to Filter/Open So 9.a. Sheetflow to Conservation Area with COT Solar Silver, ED 9.b. Sheetflow to Conservation Area with COT Solar Silver, ED 9.b. Sheetflow to Conservation Area with COT Solar Silver, ED 9.b. Sheetflow to Conservation Area with COT Solar Silver, ED 9.b. Sheetflow to Conservation Area with COT Solar Silver, ED 9.b. Sheetflow to Conservation Area with COT Solar Silver, ED 9.b. Sheetflow to Conservation Area with COT Solar Silver, ED 9.b. Sheetflow to Conservation Area with COT Solar Silver, ED 9.b. Sheetflow to Conservation Area with COT Solar Silver, ED 9.b. Sheetflow to Conservation Area with COT Solar Silver, ED 9.b. Sheetflow to Conservation Area with COT Solar Silver, ED 9.b. Sheetflow to Conservation Area with COT Solar Silver, ED 9.b. Sheetflow to Conservation Area with COT Solar Silver, ED 9.b. Sheetflow to Conservation Area with COT Solar Silver, ED 9.b. Sheetflow to Conservation Area with COT Solar Silver, ED 10.b. Wet Swelle (Constal Plan) 11.b. Filtering Practices #1 (Sec #11) 11.b. Filtering Practices #1 (Sec #11) 12. Conservation Wetland #1 (Sec #11) 13. Conservation Wetland #1 (Sec #11) 14. Conservation Wetland #1 (Sec #11) 15. Conservation Wetland #1 (Sec #11) 16. Conservation Wetland #1 (Sec #11) 17. Conservation Wetland #1 (Sec #11) 18. Conservation Wetland #1 (Sec #11) 19. Conservation Wetland #1 (Sec #11) 19. Conservation Wetland #1 (Sec #11) 10. Conservation Wetland #1 (Sec #11) 10. Conservation Wetland #1 (Sec #11) 10. Conservation Wetland #1 (Sec #11)	Met acres desired impervous ac	book of the second of the seco	enderstand methodistand methodistand statistical stat	0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	PORNING A. G. (city) A. C. (cit	0 0.00 0.00 Runoff Reduction (cr) 0 0 0	Samaking Russian (c) Company C	25 25 25 25 25 25 25 25 25 25 25 25 25 2	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	000 000 000 000 000 000 000 000 000 00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Downstream Treats	NITROGEN B	30004-1905	15. 15. 15. 15. 15. 15. 16. Extended 10. 10. 10. 10. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	

	impervious acr		0% runoff vo	olume reduction	0.00	0.00	0	0	0	45	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00	
13.b. Wet Pond #1 (Coastal Plain) (Spec #14)	turf acres draini	ng to wet pond	0% runoff vo	olume reduction	0.00	0.00	0	0	0	45	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00	Г
	impervious acre wet p		0% runoff vo	olume reduction	0.00	0.00	0	0	0	75	0.00	0.00	0.00	0.00		40	0.00	0.00	0.00	0.00	
13.c. Wet Pond #2 (Spec #14)	turf acres draini	no to wet nood	0% runoff w	nàme reduction	0.00	0.00	0	0	0	75	0.00	0.00	0.00	0.00		40	0.00	0.00	0.00	0.00	
	impervious acr	es draining to		olume reduction	0.00	0.00	0	0	0	65	0.00	0.00	0.00	0.00		30	0.00	0.00	0.00	0.00	
13.d. Wet Pond #2 (Coastal Plain) (Spec #14)	turf acres draini	no to wet nood	0% runoff w	nàme reduction	0.00	0.00	0	0	0	65	0.00	0.00	0.00	0.00		30	0.00	0.00	0.00	0.00	
14. Manufactured BMP																14. Manufa	ctured BMP				4
	impervious acri devi		0% runoff vo	olume reduction	0.00	0.00	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	
14. Insert Name of Device	turf acres drain	ing to device	0% runoff vo	olume reduction	0.00	0.00	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	1
																					1
				RVIOUS COVER		0.00															+
			101	AL TURE AREA	IREATED (ac)	0.00															+-
					AREA CHECK	OK.															1
																					+
	F	PHOSPHORUS	REMOVAL B			HORUS REMOVAL		0.00										-			+
					TOTAL PHOSE	HORUS REMOVAL	IN D.A. C (IBIYI)	0.00													+
	SEE V	VATER QUAL	LITY COME	PLIANCE TAB	FOR SITE CO	OMPLIANCE CA	LCULATIONS						İ	i				İ			1
																					+
		NITROGEN	REMOVAL B	Y PRACTICES T		ROGEN REMOVAL		0.00							1			1			_

Drainage Area D																				
Drainage Area D Land Cover (acres	s)	0.0-1- 0.0-1-	Yestele	Land Course Co.																Е
Forest/Open Space (acres) Managed Turf (acres)	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00	0.00 0.00																
Impervious Cover (acres)	0.00 0.00	0.00 0.00 Total	0.00	0.00		Post Develo	pment Treatme	ent Volume (cf)	0											F
Apply Runoff Reduction P	Practices to Reduce Tr			pment Load is	n Drainage A															
				Credit Area	Volume from Upstream RR	Runoff Reduction	Remaining Runoff	Phosphorus	Phosphorus Load from Upstream RR	Untreated Phosphorus Load to	Phosphorus Removed By Practice (lbs.)	Remaining Phosphonus			Nitrogen Efficiency	Nitrogen Load from Upstream RR Practices	Untreated Nitrogen Load to Practice (lbs.)	Nitrogen Removed By Practice	Remaining Nitrogen Load (lbs.)	
Practice	Unit	Description of Credit	Credit	(acres)	Practice (cf)	(cf)	Volume (cf)	Efficiency (%)	Practices (lbs)	Practice (lbs.)	Practice (lbs.)	Load (lbs.)	Downstream Treatment to be Employed		rsu .		(lbs.)	(lbs.)	(lbs.)	
1. Vegetated Roof		45% runoff volume		0.00					0.00		0.00	0.00			1. Green R			0.00		Н
1.a. Vegetated Roof #1 (Spec #5)	acres of oreen roof	reduction 60% runoff volume	0.45	0.00	0	0	0	0	0.00	0.00	0.00				0	0.00	0.00		0.00	
1.b. Vegetated Roof #2 (Spec #5)	acres of green roof	reduction	0.60	0.00	0		U	- 0	0.00	0.00	0.00	0.00			U	0.00	0.00	0.00	0.00	
Rooftop Disconnection a. Simple Disconnection to A/B		50% runoff volume													2. Impervio	ous Surface Dis	connection			
Soils (Spec #1) 2.b. Simple Disconnection to C/D	impervious acres disconnected	reduction for treated area 25% runoff volume	0.50	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00	H
Soils (Spec #1)	impervious acres disconnected	reduction for treated area	0.25	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00	H
2.c. To Soil Amended Filter Path as per specifications (existing C/D soils) (Spec #4)	impervious acres disconnected	50% runoff volume reduction for treated area	0.50	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00	
2.d. To Dry Well or French Drain #1 (Microinfilitation #1) (Spec #8)	impervious acres disconnected	50% runoff volume reduction for treated area	0.50	0.00	0	0	0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00	
2.e. To Dry Well or French Drain #2 (Micro-Infiltration #2) (Seec #8)	impervious acres disconnected	90% runoff volume reduction for treated area	0.90	0.00	0	0	0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00	
2.f. To Rain Garden #1 (Micro- Bioretention #1) (Spec #9)	impervious acres disconnected	d 40% of volume captured	0.40	0.00	0	0	0	25	0.00	0.00	0.00	0.00			40	0.00	0.00	0.00	0.00	
2.g. To Rain Garden #2 (Micro- Bioretention #2) (Spec #9)	impervious acres disconnected	80% runoff volume reduction for treated area	0.80	0.00	0	0	0	50	0.00	0.00	0.00	0.00			60	0.00	0.00	0.00	0.00	
2.h. To Rainwater Harvesting (Spec	impenious name conturned	based on tank size and design spreadsheet (See Soec #6)	0.00	0.00	0			0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00	
2.i. To Stormwater Planter (Urban Bioretention) (Spec #9. Appendix A)	impenious arres disconnecter	40% runoff volume reduction for treated area	0.40	0.00	0	0	0	25	0.00	0.00	0.00	0.00			40	0.00	0.00	0.00	0.00	
Distriction (Dec vs. Addition A)	inpervious acres discorrected	reduction of dealed area	0.40	0.00	Ť	_ ŭ	Ů	25	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	
Permeable Pavement A. Permeable Pavement #1 (Spec	acres of permeable pavement + acres of "external"														3. Permeat	ole Pavement				
#7)	+ acres of "external" (upgradient) impervious	45% runoff volume reduction	0.45	0.00	0	0	0	25	0.00	0.00	0.00	0.00			25	0.00	0.00	0.00	0.00	
3.b. Permeable Pavement #2 (Spec #7)	acres of permeable pavement	75% runoff volume reduction	0.75	0.00	0	0	0	25	0.00	0.00	0.00	0.00			25	0.00	0.00	0.00	0.00	Ш
4. Grass Channel															4. Grass C	bannel				H
4.a. Grass Channel A/B Soils (Spec	impervious acres draining to	20% runoff volume reduction	0.20	0.00	0	0	0	15	0.00	0.00	0.00	0.00			4. Grass C	0.00	0.00	0.00	0.00	
#3)	grass channels turf acres draining to grass channels	20% runoff volume reduction	0.20	0.00	0	0	0	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00	
	impervious acres draining to grass channels	10% runoff volume reduction	0.10	0.00	0	0	0	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00	
l.b. Grass Channel C/D Soils (Spec #3	grass channels turf acres draining to grass channels	10% runoff volume reduction	0.10	0.00	0	0	0	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00	
4.c. Grass Channel with Compost	impervious acres draining to grass channels	30% runoff volume reduction	0.10	0.00	0	0	0	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00	
4.c. Grass Channel with Compost Amended Soils as per specs (see Spec #4)	turf acres draining to grass channels	30% runoff volume reduction	0.30	0.00	0	0	0	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00	
	- Constitution	196453581	3.30		_	Ľ.		10		5.00	V.W	V.UU				0.00	2.00	2.00	2.00	
5. Dry Swale	impervious acres draining to	40% runoff volume													5. Dry Swa					
5.a. Dry Swale #1 (Spec #10)	dry swale	reduction 40% runoff volume	0.40	0.00	0	0	0	20	0.00	0.00	0.00	0.00			25	0.00	0.00	0.00	0.00	
	turf acres draining to dry swale impervious acres draining to	reduction 60% runoff volume	0.40	0.00	0	0	0	20	0.00	0.00	0.00	0.00			25	0.00	0.00	0.00	0.00	Н
5.b. Dry Swale #2 (Spec #10)	dry swale	reduction 60% runoff volume	0.60	0.00	0	0	0	40	0.00	0.00	0.00	0.00			35	0.00	0.00	0.00	0.00	Н
	turf acres draining to dry swale	reduction	0.60	0.00	0	0	0	40	0.00	0.00	0.00	0.00			35	0.00	0.00	0.00	0.00	
6. Bioretention	•														6. Bioreten	ntion				
6.a. Bioretention #1 or Urban	impervious acres draining to bioretention	40% runoff volume reduction	0.40	0.00	0	0	0	25	0.00	0.00	0.00	0.00			40	0.00	0.00	0.00	0.00	
Bioretention (Spec #9)	turf acres draining to bioretention	40% runoff volume reduction	0.40	0.00	0	0	0	25	0.00	0.00	0.00	0.00			40	0.00	0.00	0.00	0.00	
6.b. Bioretention #2 (Spec #9)	impervious acres draining to bioretention	80% runoff volume reduction	0.80	0.00	0	0	0	50	0.00	0.00	0.00	0.00			60	0.00	0.00	0.00	0.00	
	turf acres draining to bioretention	80% runoff volume reduction	0.80	0.00	0	0	0	50	0.00	0.00	0.00	0.00			60	0.00	0.00	0.00	0.00	
7. Infiltration															7. Infiltratio	on				
7.a. Infiltration #1 (Spec #8)	impervious acres draining to infiltration	50% runoff volume	0.50	0.00	0	0	0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00	
7.a. interation #1 (Spac #8)	turf acres draining to infiltration	50% runoff volume	0.50	0.00	0	0	0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00	Г
7.b. Infiltration #2 (Spec #8)	impervious acres draining to infiltration	90% runoff volume reduction	0.90	0.00	0	0	0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00	Г
7.b. Interation #2 (Spec #8)	turf acres draining to infiltration	90% runoff volume	0.90	0.00	0	0	0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00	Г
		100001011	0.30	0.50	L Ť	L.	_ ĭ		0.00		0.00	0.00							5.55	
8. Extended Detention Pond	impervious acres draining to														8. Extende					
8.a. ED #1 (Spec #15)	ED	0% runoff volume reduction	0.00	0.00	0	0	0	15	0.00	0.00	0.00	0.00			10	0.00	0.00	0.00	0.00	⊢
	turf acres draining to ED impervious acres draining to	0% runoff volume reduction 15% runoff volume	0.00	0.00	0	0	0	15	0.00	0.00	0.00	0.00			10	0.00	0.00	0.00	0.00	Н
8.b. ED #2 (Spec #15)	ED	reduction 15% runoff volume	0.15	0.00	0	0	0	15	0.00	0.00	0.00	0.00			10	0.00	0.00	0.00	0.00	-
	turf acres draining to ED	reduction	0.15	0.00	0	0	0	15	0.00	0.00	0.00	0.00			10	0.00	0.00	0.00	0.00	
9. Sheetflow to Filter/Open Spa	ace																			
	impervious acres draining to	70%													9. Sheetflo	w to Conservat	ion Area or Filt	ter Strip		
9.a. Sheetflow to Conservation Area with A/B Solls (Spec #2)	conserved open space	75% runoff volume reduction for treated area	0.75	0.00	0	0	0	0	0.00	0.00	0.00	0.00			9. Sheetflo	w to Conservat	ion Area or Filt	0.00	0.00	
	turf acres draining to conserved open space	75% runoff volume reduction for treated area	0.75 0.75	0.00	0	0	0	0	0.00	0.00	0.00	0.00			9. Sheetflo				0.00	
	turf acres draining to conserved open space impervious acres draining to conserved open space	75% runoff volume reduction for treated area 50% runoff volume reduction for treated area			0 0	0 0	0 0	0 0							9. Sheetflo	0.00	0.00	0.00		
9.b. Sheetflow to Conservation Area with C/D Soils (Spec #2)	conserved open space turf acres draining to conserved open space impervious acres draining to conserved open space turf acres draining to conserved open space	75% runoff volume reduction for treated area 50% runoff volume reduction for treated area 50% runoff volume 50% runoff reduction volume for treated area	0.75	0.00	0 0 0	0 0	0 0	0 0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00	
with C/D Soils (Spec #2) 9.c. Sheetflow to Vegetated Filter	turf acres draining to conserved open space impervious acres draining to conserved open space	reduction for treated area 75% runoff volume reduction for treated area 50% runoff volume reduction for treated area 50% runoff reduction volume for treated area 50% runoff volume reduction for treated area	0.75	0.00	0 0 0	0 0 0 0	0 0 0	0 0 0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00	
with C/D Soils (Spec #2) 9.c. Sheetflow to Vegetated Filter Strip in A Soils or Compost Amended	conserved open space turf acres draining to conserved open space impervious acres draining to conserved open space turf acres draining to conserved open space impervious acres draining to	75% runoff volume reduction for treated area 50% runoff volume reduction for treated area 50% runoff reduction volume for treated area 50% runoff volume	0.75 0.50 0.50	0.00 0.00 0.00 0.00	0 0 0 0 0 0 0	0 0 0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0.00	0.00	0.00	0.00			0	0.00 0.00 0.00	0.00	0.00	0.00	
with C/D Soils (Spec #2) 9.c. Sheetflow to Vegetated Filter	conserved open space that acres dealring to conserved open searce impervious acres draining to conserved open space that acres draining to conserved open space that acres draining to conserved open searce impervious acres draining to filter strip	reduction for treated area 75% runoff volume reduction for treated area 50% runoff volume reduction for treated area 50% runoff reduction volume for treated area 50% runoff volume reduction for treated area 50% runoff reduction	0.75 0.50 0.50 0.50 0.50	0.00	0 0 0 0 0	0 0 0 0 0	0 0 0 0	0	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00 0.00			0	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00	
with C/D Soils (Spec #2) 9.c. Sheetflow to Vegetated Filter	conserved open space that acres dealring to conserved open searce impervious acres draining to conserved open space that acres draining to conserved open space that acres draining to conserved open searce impervious acres draining to filter strip	reduction for treated area. 75% nunoff volume reduction for treated area. 50% nunoff reduction volume for neated area. 50% nunoff volume reduction for treated area.	0.75 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00	0 0 0 0 0 0	0 0 0 0 0	0 0 0 0	0 0 0 0 0 0	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00 0.00			0	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00	
with C/D Soils (Spec #2) 9.c. Sheetflow to Vegetated Filter	conserved open space that acres dealring to conserved open searce impervious acres draining to conserved open space that acres draining to conserved open space that acres draining to conserved open searce impervious acres draining to filter strip	reduction for treated area. 75% nunoff volume reduction for treated area. 50% nunoff reduction volume for neated area. 50% nunoff volume reduction for treated area.	0.75 0.50 0.50 0.50 0.50 0.50 A TREATED (ac) A REA CHECK PHOSPHORUS R	0.00 0.00 0.00 0.00 0.00 0.00 0.00	0 0 0 0 0	0 0 0	0 0 0 0 0	0 0 0 0 0 0 0	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00 0.00			0	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00	
with C/D Soils (Spec #2) 9.c. Sheetflow to Vegetated Filter	conserved span space and acres desiring to conserved soon sease, improvious acres drawing to but acres desiring to somewhere the sease of improvious acres drawing to the sease drawing the the br>the sease drawing the the sease drawing th	reduction for treated size 75% runoff volume 50% runoff volume 50% runoff volume 50% runoff reduction 50% runoff reduction 50% runoff reduction 50% runoff reduction 50% runoff reduction 50% runoff reduction 50% runoff reduction 50% runoff reduction 707AL IMPERVIOUS COVE TOTAL TURF ARE TOTAL TURF ARE TOTAL TURF ARE	0.75 0.50 0.50 0.50 0.50 0.50 A TREATED (as) A TREATED (ac) A REA CHECK PHOSPHORES TOTAL M RUNOFF RED.	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	S IN D.A. D (b)	0 0 0	0 0 0 0 0 0 0	0 0 0 0 0 0 0	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00 0.00	MET ROOMS NOW AND ADDRESS NOW	MOVAL FROM RI	0	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00	
with C/D Soils (Spec #2) 9.c. Sheetflow to Vegetated Filter	conserved open space that acres dealring to conserved open searce impervious acres draining to conserved open space that acres draining to conserved open space that acres draining to conserved open searce impervious acres draining to filter strip	reduction for treated size 75% runoff volume 50% runoff volume 50% runoff volume 50% runoff reduction 50% runoff reduction 50% runoff reduction 50% runoff reduction 50% runoff reduction 50% runoff reduction 50% runoff reduction 50% runoff reduction 707AL IMPERVIOUS COVE TOTAL TURF ARE TOTAL TURF ARE TOTAL TURF ARE	0.75 0.50 0.50 0.50 0.50 0.50 A TREATED (as) A TREATED (ac) A REA CHECK PHOSPHORES TOTAL M RUNOFF RED.	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	S IN D.A. D (b)	0 0 0	0 0 0 0 0 0	0 0 0 0 0 0 0 0	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00 0.00	MITIOGEN ICM		0 0 0 0 0 0	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00	0.00	
with DID Sold Rides E2 6. Divertible to Volgatural Filter 9. Divertible to Volgatural Filter BUCH Solds (Stock E2 & 44)	conserved sport space. Met acres during to Met acres during to Improving	TOTAL TURN COMPTIONS OF TOTAL	0.75 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	S IN D.A. D (b)	0 0 0	0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00 0.00	MYNOGIS MIN		0 0 0 0 0 0	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00	0.00	
with C/D Soils (Spec #2) 9.c. Sheetflow to Vegetated Filter	conserved sport space. Met acres during to Met acres during to Improving	TOTAL TURN COMPTIONS OF TOTAL	0.75 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	SIND.A. D (b)	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.00	0.00 0.00 0.00 0.00	0.00	0.00	MITOGRAFIA		0 0 0 0 0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00	0.00	0.00	
with DID Sold Rides E2 6. Divertible to Volgatural Filter 9. Divertible to Volgatural Filter BUCH Solds (Stock E2 & 44)	conserved sport space. Met acres during to Met acres during to Improving	TOTAL THEORY SERVICES TOTAL THEORY REMOVES TOTAL THEORY AND TOTAL TOTAL THEORY REMOVES TOTAL THEORY AND TOTAL TOTAL THEORY AND TOTAL TOTAL THEORY AND TOTAL THEORY AND TOTAL THEORY REMOVES TOTAL THEORY AND THE TOTAL THEORY AND THE TOTAL THEORY AND THE TOTAL THEORY AND THE TOTAL THEORY AND THE TOTAL THEORY AND THE TOTAL THEORY AND THE TOTAL THEORY AND THE TOTAL THEORY AND THE TOTAL THEORY AND THE TOTAL THEORY AND THE TOTAL THEORY AND THE TOTAL THEORY AND THE TOTAL THEORY AND THE TOTAL THEORY AND THE TOTAL	0.75 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	SIND.A. D (b)	0 0 0	0 0 0 0 0 0 0 Remaining Runoff	0 0 0 0 0 0 0 0 Phosphorus Efficiency M-	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	MF ROOM NO		0 0 0 0 0 0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00	0.00	0.00 0.00 0.00 0.00 0.00	
with CDI Sold Rises \$20. 4. Sharffler to Mysell Sold Rises \$2. A sharffler to Mysell A Sold or Companied Plant Sold of Sold Rises \$2. A \$41. Apply Practices that Remo	contracts good basic values of the contract good basic values of the contract good basic values of the contract good good basic values of the contract good good basic values of the contract good good good good good good good goo	TOTAL TURN COMPTIONS OF TOTAL	0.75 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	S IN D.A. D (b)	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 Remaining Runoff Volume (cf)	0 0 0 0 0 0 0 0 Phosphorus	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	Dounttean Testiment to be Employed	MOVAL FROM R	0 0 0 0 0 0 0 TOTAL INOFF REDU	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00	0.00	
with CD floid files. \$20 9.c. Sheefine to Vegasand Files 10.c. Sheefine to Vegasand Files 10.c. Sheefine to the control of	contracts good basic values of the contract good basic values of the contract good basic values of the contract good good basic values of the contract good good basic values of the contract good good good good good good good goo	TOTAL THEORY SERVICES TOTAL THEORY REMOVES TOTAL THEORY AND TOTAL TOTAL THEORY REMOVES TOTAL THEORY AND TOTAL TOTAL THEORY AND TOTAL TOTAL THEORY AND TOTAL THEORY AND TOTAL THEORY REMOVES TOTAL THEORY AND THE TOTAL THEORY AND THE TOTAL THEORY AND THE TOTAL THEORY AND THE TOTAL THEORY AND THE TOTAL THEORY AND THE TOTAL THEORY AND THE TOTAL THEORY AND THE TOTAL THEORY AND THE TOTAL THEORY AND THE TOTAL THEORY AND THE TOTAL THEORY AND THE TOTAL THEORY AND THE TOTAL THEORY AND THE TOTAL THEORY AND THE TOTAL	0.75 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	SIND.A. D (b)	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 Remaining Runoff Volume (cf)	0 0 0 0 0 0 0 Phosphorus Efficiency (%)	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	AMPRODER SA	MOVAL FROM R	0 0 0 0 0 0 0 TOTAL INOFF REDU	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00	0.00 0.00 0.00 0.00 0.00	
with CD floid files. \$20 9.c. Sheefine to Vegasand Files 10.c. Sheefine to Vegasand Files 10.c. Sheefine to the control of	continues goes passes Mil asses desiring to improvise acree during to	Control of Personal Control of Personal Control of Personal Control October Control of Personal Control of Personal Control october Control oc	0.75 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	ALCULATIONS Volume from Upstream RR Practice (cf)	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			0.00 0.00 0.00 0.00 0.00 0.00 0.00 Phosphorus Load from Upstream RR Practices (bs)	0.00 0.00 0.00 0.00 0.00 0.00 0.00 Untreased	0.00 0.00 0.00 0.00 0.00 0.00 Phosphorus Removed By Practice (bit.)	0.00 0.00 0.00 0.00 0.00 0.00	MITROGEN FOR	MOVAL FROM R	0 0 0 0 0 0 TOTAL INDEF REDU	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00	
with IOTS Sole (See 52) L. Disviller to Victoria See 50 of the Vic	contents good space of contents good space go	Control of Personal Control of Personal Control of Personal Control October Control of Personal Control of Personal Control october Control oc	0.75 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	CONINDAD (ch SINDAD (c	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0	20	0.00 0.00 0.00 0.00 0.00 0.00 0.00 Phosphorus Load from Practices (bu)	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 Phosphorus Removed By Practice (bs.)	0.00 0.00 0.00 0.00 0.00 0.00	Downstream Treatment to be Employed	MOVAL FROM R	0 0 0 0 0 0 TOTAL INDEF REDU	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 Remaining Nirogen Load (bs.)	
with CDIS Sold (Sec. 52) - Describe 1 - Victoria Sold (Sec. 52) - Startine 1 - Victoria Sold (Sec. 52) - Startine 1 - Victoria Sold (Sec. 52) - Startine 1 - Victoria Sold (Sec. 52) - Apply Practices that Remo Practice 10. Wed Swale (Coestal Plain)	control special	Control of Personal Action of Pe	0.75 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	NO. IN D.A. D fen S IN D.A. D flown ALCULATIONS Volume from Upstream RR Practice (cf)	0 0 0 0 0 0 0 0 0 0 0 0 0 0	0	20	Prosporars Load from Prosporars Load from Prosporars Load from Loa	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 Phosphorus Removed By Practice (bs.)	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Downstream Treatment to be Employed	MOVAL FROM R	0 0 0 0 0 0 0 1 TOTAL INOFF REDU	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 Remaining Nirogen Load (bs.)	
with Off Sold (Soc. 57) S. Bowlifes to Vigoration Flav Step in A Solin or Composit Amends BACH Solin filter, \$2.4 481 Apply Practices that Remi- Practice 10. Wat Swale (Costos Philip) 10. a. Wat Swale (Soc. \$11) 10. b. Wat Swale (Since \$11)	contracts goth place in Marian and Contracts of the Contract of Contracts of Contra	Control of the Contro	0.75 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	NO. IN D.A. D fen S IN D.A. D flown IN D.A. D flown ALCULATIONS Volume from Upstream RR Practice (cf)	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0	20 20 40	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Universed Phosphorus Load to Practice (bit) 0.00 0.00 0.00 0.00 0.00 0.00 0.00	Phosphorus Removed by Practice (bs.)	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Downstream Treatment to be Employed	MOVAL FROM R	0 0 0 0 0 0 0 0 TOTAL	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 Natrogen Removed by Practice (0x.)	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	
with CDIS Sold (Sec. 52) - Describe 1 - Victoria Sold (Sec. 52) - Startine 1 - Victoria Sold (Sec. 52) - Startine 1 - Victoria Sold (Sec. 52) - Startine 1 - Victoria Sold (Sec. 52) - Apply Practices that Remo Practice 10. Wed Swale (Coestal Plain)	control special	Control of the Contro	0.75 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	NO. IN D.A. D fen S IN D.A. D flown IN D.A. D flown ALCULATIONS Volume from Upstream RR Practice (cf)	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0	20 20 40 40	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 Phosphorus Preside (bs.) 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 Remaining Phospherus Load (8x-) 0.00 0.00	Methodologica Fostinees to be Employed	MOVAL FROM R	0 0 0 0 0 0 0 0 TOTAL	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	
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with DOTS float (Sizes 52) Apply Practices that Remo Apply Practices that Remo Apply Practices that Remo Apply Practices that Remo Practice 10 a. West Swale (Constal Prisin) 10 a. West Swale (Constal Prisin) 11 a. Filtering Practices 11 a. Filtering Practices 11 a. Filtering Practice 81 (Spec 812) 11 b. Filtering Practice 81 (Spec 812) 11 b. Filtering Practice 82 (Spec 812)	contents good spool, or contents good spool, or contents good spool, or contents good spool, or contents good good spool, or contents good good spool, or contents good good spool, or contents good good spool, or contents good good good good good good good goo	Consideration of the control of the	0.75 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	INONE NA. O Left SERVICE SERVI	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0	20 20 40 40 40 60 60 65	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Dounttean Trainment to be Employed	2004A, FEORI S	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.60 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	000 000 000 000 000 000 000 000 000 00	
with DOTS floor (Store 25) - Descrition 1 Vision 1 Store 2 St	course special place of the control	Consideration of the control of the	0.75 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	INONE NA. O Left SERVICE SERVI	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	20 20 40 40 60 60 65 65	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Downstream Treatment to be Employed	2004A, FEORI S	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.60 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	
with DOTS floor (Store 25) - Descrition 1 Vision 1 Store 2 St	contents good spool of contents good spool of contents good spool of contents good spool of contents good spool of contents good good spool of contents good good good good good good good goo	control of the contro	0.75 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	INON IN IA. D Left SERVICE SER	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	20 20 40 40 40 60 60 65 65	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Doublish Training to be Engineed	2004A, FEORI S	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	
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	impervious acr		0% runoff v	olume reduction	0.00	0.00	0	0	0	45	0.00	0.00	0.00	0.00				20	0.00	0.00	0.00	0.00	1
13.b. Wet Pond #1 (Coastal Plain) (Spec #14)	turf acres drain	ing to wet pand	0% runoff v	olume reduction	0.00	0.00	0	0	0	45	0.00	0.00	0.00	0.00				20	0.00	0.00	0.00	0.00	Г
	impervious acr		0% runoff v	nàme reduction	0.00	0.00	0	0	0	75	0.00	0.00	0.00	0.00				40	0.00	0.00	0.00	0.00	Г
13.c. Wet Pond #2 (Spec #14)			095 pupo# u	ohmo rodustico	0.00	0.00	0	0	0	76	0.00	0.00	0.00	0.00				40	0.00	0.00	0.00	0.00	
1333, 1181 3110 72 13340 7 71	impervious aci	res draining to		nàme reduction		0.00	0	0	0	65	0.00	0.00	0.00	0.00				30	0.00	0.00	0.00	0.00	
13.d. Wet Pond #2 (Coastal Plain) (Spec #14)				olume reduction	0.00	0.00	0	0	0	65	0.00	0.00	0.00	0.00				30	0.00	0.00	0.00	0.00	Г
10540 #141	IOI ACIDO CIA	III D WAS DOING	CA ISIN I			0.00	_ ·		Ť		0.00	0.00	0.00	0.00					0.00				1
14. Manufactured BMP	lanufactured BMP 14. Manufactured BMP																						
	impervious aci		0% runoff v	olume reduction	0.00	0.00	0	0	0	0	0.00	0.00	0.00	0.00				0	0.00	0.00	0.00	0.00	
14. Insert Name of Device	turf acres drai	ning to device	0% runoff v	olume reduction	0.00	0.00	0	0	0	0	0.00	0.00	0.00	0.00				0	0.00	0.00	0.00	0.00	
						0.00																	Τ-
				RVIOUS COVER		0.00																 	+
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					AREA CHECK	OK.																	Τ-
		DUNGBUNDING	DEMOVAL D	V DDACTICES T	THAT DO NOT D	EDUCE RUNOFF V	OLUME IN D.A. D.	0.00					 	 		 				 			+
		THOU HOROS	I LIIOTAL L			HORUS REMOVAL		0.00															+
	SEE	WATER QUA	LITY COM	PLIANCE TAE	FOR SITE C	OMPLIANCE CA	LCULATIONS															⊢	+
			_							 			-	-		 		<u> </u>		1	 		+-
		NITROGEN	REMOVAL B	Y PRACTICES T		EDUCE RUNOFF V		0.00															
					TOTAL NO	ROGEN REMOVAL	IN D.A. D (lb(vr)	0.00	1							l —				1			1 -

Drainage Area E						T	1	1				1		1			1	1	1	
Drainage Area E Land Cover (acres	s)																			
Forest/Open Space (acres) Managed Turf (acres)	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0 0.00 0 0.00	0.00 0 0.00 0		00 00															
Impervious Cover (acres)	0.00 0.		0.00 0	00 0	00	Post Dev	elopment Treatm	nent Volume (cf	0											
Apply Runoff Reduction F	Practices to Redu	e Treatment Vo			Load in Draina		I Treats	VOIDING (C)												
					Volume fro		Remaining Runoff		Phosphorus Load from Upstream RR	Untreated Phosphorus Load to	Phosphorus Removed By	Remaining Phosphorus			Nitrogen Efficiency	Nitrogen Load from Upstream RR Practices	Untreated Nitrogen Load	Nitrogen Removed By Practice	Remaining Nitrogen Load	
Practice	Unit	Description	of Credit Credit	Credit (acres)	Practice () (cf)	Volume (cf)	Efficiency (%	Practices (lbs)	Practice (lbs.)	Practice (lbs.)	Load (lbs.)	Downstream Treatment to be Employe	d	rsa	(Ibs)	Nitrogen Load to Practice (lbs.)	(lbs.)	(lbs.)	
1. Vegetated Roof		45% runo	volume												1. Green R					
1.a. Vegetated Roof #1 (Spec #5)	acres of green ro	reduce 60% runo	on 0		00 0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00	-
1.b. Vegetated Roof #2 (Spec #5)	acres of green ro	reduc	on 0	30 (00 0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00	
2. Rooftop Disconnection															2. Impervi	ous Surface Dis	sconnection			
2.a. Simple Disconnection to A/B Soils (Spec #1)	impervious acres disco	50% runo sected reduction for	sated area 0	50 (00 0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00	
2.b. Simple Disconnection to C/D Soils (Spec #1)	impervious acres disco	25% runo nected reduction for	volume sated area 0	25 (00 0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00	
2.c. To Soil Amended Filter Path as per specifications (existing C/D soils)		50% runo							0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	
(Spec #4) 2.d. To Dry Well or French Drain #1 (Microinfiliration #1) (Spec #8)	morrous acres daco	sected reduction for 50% runo sected reduction for	volume	50 (00 0		0	26	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00	
2.e. To Dry Well or French Drain #2 (Micro Infiltration #2) (Spec #8)	impervious acres disco	90% runo	volume	90 (00 0	-	0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00	
2.f. To Rain Garden #1 (Micro- Bioretention #1) (Spec #9)	moerwous acres disco	ected reduction for			00 0		-	25	0.00	0.00	0.00	0.00			40	0.00	0.00	0.00	0.00	
2.c. To Rain Garden #2 (Micro-	impervious acres disco	ected 40% of voluments 80% runo	volume		00 0	-	-		0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	
Bioretention #2) (Spec #9) 2.h. To Rainwater Harvesting (Spec	impervious acres disco	nected reduction for based on ta design sprea	size and	90 (00 0	0	0	50	0.00	0.00	0.00	0.00			60	0.00	0.00	0.00	0.00	
#6)	impervious acres cap			20 0	00 0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00	-
2.j. To Stormwater Planter (Urban Bioretention) (Spec #9. Appendix A)	impervious acres disco	40% runo nected reduction for	ated area 0	40 0	00 0	0	0	25	0.00	0.00	0.00	0.00			40	0.00	0.00	0.00	0.00	
3. Permeable Pavement															3. Permeal	ble Pavement				
3.a. Permeable Pavement #1 (Spec	acres of permeable par + acres of "extern	ment 45% runo	volume																	
3.b. Permeable Pavement #2 (Spec	(upgradient) impervi	us reduc 75% runo	on 0		00 0	0	0	25	0.00	0.00	0.00	0.00			25	0.00	0.00	0.00	0.00	-
#7)	acres of permeable par	ment reduc	0	75 (00 0	0	0	25	0.00	0.00	0.00	0.00			25	0.00	0.00	0.00	0.00	+
4. Grass Channel															4. Grass C	hannel				
4.a. Grass Channel A/B Soils (Spec	impervious acres drain grass channels		on 0	20 (00 0	0	0	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00	oxdot
#3)	turf acres draining to channels	reduc	on 0	20 (00 0	0	0	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00	L
l.b. Grass Channel C/D Soils (Spec #3	impervious acres drain grass channels	redu	volume on 0		00 0	0	0	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00	\Box
	turf acres draining to channels	rass 10% runo redus	volume		00 0	0	0	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00	L
4.c. Grass Channel with Compost Amended Soils as per specs (see Spec #4)	impervious acres drain grass channels	ng to 30% runo redu:	volume on 0		00 0	0	0	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00	L
Spec #4)	turf acres draining to channels	ass 30% runo reduc	volume	30 (00 0	0	0	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00	
							Ļ													
5. Dry Swale	impervious acres drain	ng to 40% runo	volume												5. Dry Swa					
5.a. Dry Swale #1 (Spec #10)	dry swale	redu: 40% runo	on 0		00 0	0	0	20	0.00	0.00	0.00	0.00			25	0.00	0.00	0.00	0.00	
—	turf acres draining to dr impervious acres drain	swale reduc	on 0		00 0	0	0	20	0.00	0.00	0.00	0.00			25	0.00	0.00	0.00	0.00	
5.b. Dry Swale #2 (Spec #10)	dry swale	ng to 60% runo redu: 60% runo	on 0		00 0	0	0	40	0.00	0.00	0.00	0.00			35	0.00	0.00	0.00	0.00	
	turf acres draining to dr	swale reduc	on 0	30 (00 0	0	0	40	0.00	0.00	0.00	0.00			35	0.00	0.00	0.00	0.00	-
6. Bioretention															6. Bioreter	ntion				
6.a. Bioretention #1 or Urban	impervious acres drain bioretention	ng to 40% runo reduc	volume on 0	10 0	00 0	0	0	25	0.00	0.00	0.00	0.00			40	0.00	0.00	0.00	0.00	
Bioretention (Spec #9)	turf acres draining bioretention	reduc	on 0	10 (00 0	0	0	25	0.00	0.00	0.00	0.00			40	0.00	0.00	0.00	0.00	oxdot
6.b. Bioretention #2 (Spec #9)	impervious acres drain bioretention	ng to 80% runo redu:	on 0	30 (00 0	0	0	50	0.00	0.00	0.00	0.00			60	0.00	0.00	0.00	0.00	L
(400.00)	turf acres draining bioretention	80% runo redus	unkumn		00 0	0	0	50	0.00	0.00	0.00	0.00			60	0.00	0.00	0.00	0.00	
7. Infiltration	impervious acres drain	ng to 50% runo	volume			_									7. Infiltration	on				
7.a. Infiltration #1 (Spec #8)	infiltration	redu: 50% runo	on 0	50 0	00 0	0	0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00	-
	turf acres draining to inf impervious acres drain	ration reducting to 90% runo	onlume	50 0	00 0	0	0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00	Н
7.b. Infiltration #2 (Spec #8)	infiltration	reduc 90% runo	volume		00 0	0	0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00	Н
	turf acres draining to inf	ration reduc	on 0	30 0	00 0	0	0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00	
8. Extended Detention Pond															8. Extende	d Detention Po	nd			
8.a. ED #1 (Spec #15)	impervious acres drain ED	ng to 0% runoff volu	e reduction 0	00 0	00 0	0	0	15	0.00	0.00	0.00	0.00			10	0.00	0.00	0.00	0.00	
	turf acres draining to	ED 0% runoff volu	e reduction 0	00 (00 0	0	0	15	0.00	0.00	0.00	0.00			10	0.00	0.00	0.00	0.00	
8.b. ED #2 (Spec #15)	impervious acres drain ED	ng to 15% runo reduc	volume on 0		00 0	0	0	15	0.00	0.00	0.00	0.00			10	0.00	0.00	0.00	0.00	
	turf acres draining to	15% runo ED reduc	volume on 0	15 (00 0	0	0	15	0.00	0.00	0.00	0.00			10	0.00	0.00	0.00	0.00	
9. Sheetflow to Filter/Open Sp.															9. Sheetflo	w to Conserva	tion Area or Fil	ter Strin		
and the state of t	impervious acres drain	ng to 75% runo se reduction for	volume sated area	75	00 0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00	
9.a. Sheetflow to Conservation Area with A/B Soils (Spec #2)	turf acres draining	neduction for 75% runo	volume		00 0			0	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	
WITH AND OURS (S00C RZ)	impervious acres drain conserved open sp	ng to 50% runo	volume		00 0		0	0	0.00		0.00	0.00					0.00	0.00	0.00	
9.b. Sheetflow to Conservation Area	conserved open sp turf acres draining	50% runoff	duction	50 0	00	0	0	U	0.00		0.00	0.00			0		0.00	0.00	0.00	
with C/D Soils (Spec #2)	conserved open so impervious acres drain	ng to 50% runo	unkumn	a (0.07	0.00	0.00	0.00			0	0.00	0.00		0.07	-4
9.c. Sheetflow to Vegetated Filter Strip in A Soils or Compost Amended B/C/D Soils (Spec #2 & #4)	filter strip	reduction for		10	00 -	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00	
B/C/D Soils (Spec #2 & #4)	turf acres draining to fit	50% runott	ated area 0		00 0	0	0	0	0.00	0.00	0.00				0 0	0.00	0.00	0.00	0.00	
			ated area 0	50 (00 0	0	0	0		0.00	0.00	0.00			0 0 0	0.00	0.00			
		r strio volume for to	ated area 0 eduction sted area 0	50 (ED (ac) (00 0	0	0	0	0.00	0.00	0.00	0.00			0 0 0	0.00	0.00			
		r strio volume for to	ated area 0 duction sted area 0	50 (ED (ac) (00 0	0	0	0	0.00	0.00	0.00	0.00			0 0 0	0.00	0.00			
		r strio volume for to	duction of the date of the dat	ED (ac) (ED (ac) (CED (ac)	00 0 00 00 REQUIRED ON SITE REDUCTION IN D.A.	(ch 0	0	0	0.00	0.00	0.00	0.00			0 0	0.00	0.00	0.00		
		TOTAL IMPERIOD TOTAL	ated area 0 duction und area 0 DUS COVER TREAT TURF AREA TREAT AREA TOTAL PHOSPH DVAL FROM RUNOI	ED (ac) (ED (ac) (CHECK OK. RUS REMOVAL TOTAL RUNOF F REDUCTION F	00 0 00 0 REQUIRED ON SITE REDUCTION IN D.A. RACTICES IN D.A. E	(cn 0 b(yr) 0.00	0 0	0	0.00	0.00	0.00	0.00	MTROGE	REMOVAL FROM	0 0 0 0	0.00	0.00			
		r strio volume for to	ated area 0 duction und area 0 DUS COVER TREAT TURF AREA TREAT AREA TOTAL PHOSPH DVAL FROM RUNOI	ED (ac) (ED (ac) (CHECK OK. RUS REMOVAL TOTAL RUNOF F REDUCTION F	00 0 00 0 REQUIRED ON SITE REDUCTION IN D.A. RACTICES IN D.A. E	(cn 0 b(yr) 0.00	0	0	0.00	0.00	0.00	0.00	MROSE	REMOVAL FROM	0 0 0 0 0	0.00	0.00	0.00		
Apply Practices that 0	SEE WATE	TOTAL IMPERIOR TOTAL TOTAL PROSPHORUS REI PHOSPHORUS REI PUBLITY COMPL	abed area 0 observed on 0 DUS COVER TREAT FURF AREA TREAT AREA TOTAL PHOSPH DIVAL FROM RUNOI NICE TAB FOR	ED (ac) (CHECK OK. RUS REMOVAL TOTAL RUNOF REDUCTION F	00 0 00 0 REQUIRED ON SITE REDUCTION IN D.A. RACTICES IN D.A. E	(cn 0 b(yr) 0.00	0	0	0.00	0.00	0.00	0.00	M10-002	REMOVAL FROM	0 0 0 0 0	0.00	0.00	0.00		
Apply Practices that Remo	SEE WATE	TOTAL IMPERIOR TOTAL TOTAL PROSPHORUS REI PHOSPHORUS REI PUBLITY COMPL	abed area 0 observed on 0 DUS COVER TREAT FURF AREA TREAT AREA TOTAL PHOSPH DIVAL FROM RUNOI NICE TAB FOR	SO (ac) (CD	00 0 00 00 00 REQUIRED ON SITE REDUCTION IN D.A. ACCICES IN D.A. E	(c) 0 b(vr) 0.00	O O O O O O O O O O O O O O O O O O O	0	0.00 0.00 Frosprorus Load from	0.00	0.00 0.00 0.00	0.00 0.00 0.00	MFROCCO	REMOVAL FROM	RUNOFF REDU	0.00 0.00 0.00 0.00 0.00 RUNOFF REDUCTION PRACTICE	0.00 0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00	
Apply Practices that Remi	SEE WATE	TOTAL IMPERIOR TOTAL INFORMATION OF TOTAL IMPERIOR	abed area 0 observed on 0 DUS COVER TREAT FURF AREA TREAT AREA TOTAL PHOSPH DIVAL FROM RUNOI NICE TAB FOR	ED (ac) (CHECK OK. RUS REMOVAL TOTAL RUNOF REDUCTION F	00 0 00 0 00 0 00 0 00 0 00 0 00 0 00	m Runoff	0 0 0 Remaining Runoff	0 0 0 Phosphorus Efficiency (%	0.00 0.00 Phosphorus Load from Uostream RR	0.00 0.00 0.00 untreased Phosphorus Loute	0.00 0.00 0.00	0.00 0.00 0.00	NFROGER NFROGER Downstream Treatment to be Employe	REMOVAL FROM	RUNOFF REDU	0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00	0.00	
	SEE WATE	TOTAL IMPER TOTAL	AREA TOTAL PHOSPH OVAL FROM RUNO RUNOTE TAB FOR RUNOFF Volum	ED (ac) (ED	00 0 00 0 00 0 00 0 00 0 00 0 00 0 00	m Runoff	Runoff	Q Q Q	0.00 0.00 Phosphorus Load from Uostream RR	0.00 0.00 0.00 untreased Phosphorus Loute	0.00 0.00 0.00	0.00 0.00 0.00	METRODES Doubtiness Treatment to be English	REMOVAL FROM	Ntrogen Efficiency (%)	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 Untreased Niregen Load to Practice (0x.)	0.00 0.00 0.00	0.00 0.00	
Practice	SEE WATE	TOTAL IMPER TOTAL	anded area 0 discriming area 0 NISS COVER TREAT TURF AREA TREAT AREA TOTAL PHOSPH DVAL FROM RUNDI NINCE TAB FOR RUNDIFF OF COMMENT OF CREEK CREE	SO (CED (ac) (CE	00 0 00 0 00 0 00 0 00 0 00 0 00 0 00	m Runoff	Runoff	0 0 0 Phosphorus Efficiency (%	0.00 0.00 Phosphorus Load from Uostream RR	0.00 0.00 0.00 untreased Phosphorus Loute	0.00 0.00 0.00	0.00 0.00 0.00	INTROOFS Countercare Treatment to be Employee	REMOVAL FROM	Ntrogen Efficiency (%)	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 Untreased Niregen Load to Practice (0x.)	0.00 0.00 0.00	0.00 0.00	
Practice	SEE WATE: ove Pollutants bi impervious acres drained in seels and acres delaring to we	TOTAL IMPERIOR TOTAL INFORMATION OF TOTAL IMPERIOR	and area 0 ded decision of the	SO (CED (ac) CED (ac)	00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	m Runoff Reduction (cf)	Runoff Volume (cf)	Efficiency (%	0.00 0.00 Phosphorus Load from R Practices (bs)	0.00 0.00 0.00 0.00 Universed Phosphorus Load to Practice (bs.)	0.00 0.00 0.00 0.00 Phosphorus Removed By Practice (Bs.)	0.00 0.00 0.00 0.00	Network to be English	REMOVAL FROM	Ntrogen Efficiency (%)	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 Netrogen Removed by Practice (lbs.)	0.00 0.00 Remaining Ntrogen Load (lbs.)	
Practice 10. Wet Swale (Coastal Plain)	SEE WATE	TOTAL IMPERIOR TOTAL INFORMATION OF TOTAL IMPERIOR	anted area 0 deduction of class 2 deduction of class 2 deduction of class 2 deduction of class 2 deduction of class 2 deduction of class 2 deduction of class 2 deduction 0 de	D (ac) (D (ac)	00 0 00 0 00 00 SEQUENCE ON SITE RECOUTION N D.A. EACHDIS IN D.A. E NCE CALCULAT. Volume fri Upstream Practice (c	m Runoff RR Reduction (cf)	Runoff Volume (cf)	Efficiency (%	Phosphorus Load from Upstraam RR Practices (ba)	0.00 0.00 0.00 0.00 Untreased Phosphorus Load to Practice (bit.)	Phosphorus Removed By Practice (Bs.)	0.00 0.00 0.00 0.00 Remaining Phosphorus Load (bs.)	NETROGET	ROMOVAL FROM	Nitrogen Efficiency (%)	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 Remaining Nitrogen Load (U.S.)	
Practice 10. Wet Swale (Coastal Plain)	SEE WATE OVE POllutants by Usas impervious acres drain set swale and acres districts to us impervious acres impervious acres impervious	YOTAL IMPERCATION OF TOTAL IMP	anted area 0 duction of area 0 support TREAT UNIF AREA TREAT TOTAL PHOSPHPM AREA FROM RUNO UNCE TAB FOR Runoff Volum of Credit Credit redit of Credit Credit Credit of Credit Credit Credit of Credit Credit Credit of Credit Credit Credit of Credit Credit Credit Credit of Credit Credit Credit Credit of Credit C	D (ac) (D (ac)	SEQUECE ON SITE IN SECURITION IN D. A.	m Runoff Reduction (cf)	Runoff Volume (cf)	20	Phosphorus Load from Upstraam RR Practices (ba)	Untreased Phosphorus Load to Practice (Br.)	Phosphorus Removed By Practice (bit.)	Remaining Phosphorus Load (bs.)	NETROGES Countriesen Treatment to be Employe	A REMOVAL FROM	Ntrogen Efficiency (%) 10. Wet Sy 25	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 Netrogen Removed by Practice (lbs.)	0.00 0.00 Remaining Nirogen Load (Mr.) 0.00	
Practice 10. Wet Swale (Coastal Plain) 10.a. Wet Swale #1 (Scor. #11) 10.b. Wet Swale #2 (Scor. #11)	SEE WATER OVE POllutants by Usas impervious acres drain use seale and acres drain to use impervious acres drain to use	YOTAL IMPERCATION OF TOTAL IMP	anted area 0 duction of area 0 support TREAT UNIF AREA TREAT TOTAL PHOSPHPM AREA FROM RUNO UNCE TAB FOR Runoff Volum of Credit Credit redit of Credit Credit Credit of Credit Credit Credit of Credit Credit Credit of Credit Credit Credit of Credit Credit Credit Credit of Credit Credit Credit Credit of Credit C	D (ac) (D (ac)	OO 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	m Runoff (cf)	Runoff Volume (cf)	20 20 40	0.00 0.00 0.00 Propress Load from Upstream RR Practices (bs) 0.00 0.00	Universities Unive	Phosphorus Removed By Practice (bit.) 0.00 0.00	Remaining Phosphorus Load (bs.)	Netrodis Description Treatment to be Employee	d d	Nirogen Efficiency (19) 10. Wet Sy 25 35 35	Nercogen Load from Upstream RP Practices (Ids) 0.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00	
Practice 10. Wet Swale (Coastal Plain) 10. a. Wet Swale #1 (Seec #11)	SEE WATE OVE POllutants by Usas impervious acres drain set swale and acres districts to us impervious acres impervious acres impervious	Avient to the control of the control	anted area 0 on the date of th	SO (COMPLIA Credit (acres) Credit (acres) Credit (acres)	00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	m Runoff (cf)	Runoff Volume (cf)	20 20 40 40	Proceptions Load from Upperson (the)	Universed Phosphorus Load to Practice (bit) 0.00 0.00 0.00 0.00	Phosphorus Removed By Practice (bs.) 0.00 0.00 0.00 0.00 0.00 0.00	Remaining Phosphorus Load (bs.) 0.00 0.00 0.00 0.00 0.00 0.00 0.00	NETOCOD Doundrawn Treatment to be Engling	REMOVAL FROM	Nirogen Efficiency (%) 10. Wet Sy 25 25 35 35 11. Filterin	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 Remaining Narogen Load (No.) 0.00 0.00	
Practice 10. Wet Swile (Coastal Plain) 10. Wet Swile if Since #11 10. Wet Swile #1 (Since #11) 10. Wet Swile #2 (Since #11) 11. Filtering Practices	SEE WATE UNA Improvious acres disin seperation seperation acres disin seperation acres disin seperation s	Available for its control of the con	anada area 0 de anada area 0 de anada area 0 de anada area 0 de anada de anada area 0 de anada anada area 0 de anada ana	SO (COMPLIANT) COMPLIANT COMPLI	00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	m Runolf Reduction (cf)	Runoff Volume (cf)	20 20 40 40	Prospensus Load from Upstream RR Practices (ha) 0.00 0.00	Universités Universités Phosphorus Load to Practice (fbs.) 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 Phosphorus Removed by Practice (bs.) 0.00 0.00 0.00	Remaining Phosphorus Load (8s.) 0.00 0.00 0.00 0.00 0.00 0.00 0.00	SETTOGES Desanstream Treatment to be Employed	ROMOVAL FROM	Nirogen Efficiency (%) 10. Wet Sv. 25 25 35 11. Filterin	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 Remaining Narogen Load (bs.) 0.00 0.00	
Practice 10. Wet Swelle (Coastal Plain) 10. A. Wet Swelle I Rose #11 10. A. Wet Swelle II Rose #11 10. A. Wet Swelle II Rose #11 11. Filtering Practices	SEE WATE SEE WATE OVE POllutants bu suppervious acres data and acres data used smale and acres data used smale and acres data used smale and acres data used smale	LISTON Webster for in TOTAL SHEET TOTAL T	anada area 0 de anada area 10 de anada a	SO (COMPLICATION OF COMPLICATION OF COMPLICATI	00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	m Runoff Reduction (cf)	Runoff Volume (cf)	20 20 40 40 60	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Universities Unive	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Remaining Phosphorus Load (fbs.) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	Downstream Treatment to be Employed	A REMOVAL FROM	Nirogen Efficiency (19) 10, Wet Sv 25 26 35 35 31, Filterin 30	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 Remaking Narogen Load (bs.) 0.00 0.00 0.00 0.00	
Practice 10. Wet Swale (Coastal Plain) 10. Wet Swale at (Good #11) 10. Wet Swale #2 (Good #11) 11. Filtering Practices 11.a Filtering Practices #1 (Good #12)	SEE WATE. Over Pollutants by Impervious acres drained in the see acre	TOTAL SIERCE TOTAL SIERCE TOTAL SIERCE TOTAL SIERCE TOTAL TO	and area 0 decision of the state of the stat	Dush (in the property of the	00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	(ef)	Runoff Volume (cf)	20 20 40 40 60 60	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	University of the Control of the Con	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Remaining Phosphorus Load (bs.) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0	Downstream Treatment to be Employ	R CMOVAL FROM	Nirogen Efficiency (19) 10. Wet Sv. 25 25 35 31. Filterin 30 30 45	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	
Practice 10. Wet Swile (Coastal Plain) 10. Wet Swile if Since #11 10. Wet Swile #1 (Since #11) 10. Wet Swile #2 (Since #11) 11. Filtering Practices	SEE WATE. Over Pollutants by Impervious acres drained in the see acre	TOTAL SIERCE TOTAL SIERCE TOTAL SIERCE TOTAL SIERCE TOTAL TO	and area 0 decision of the state of the stat	Dush (in the property of the	00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	m Runoff Reduction (cf)	Runoff Volume (cf)	20 20 40 40 60	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Universities Unive	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Remaining Phosphorus Load (fbs.) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	National Treatment to be Employed	RESERVAL FROM	Nirogen Efficiency (19) 10, Wet Sv 25 26 35 35 31, Filterin 30	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 Remaking Narogen Load (bs.) 0.00 0.00 0.00 0.00	
Practice 10. Wet Swale (Coastal Plain) 10. Wet Swale at (Good #11) 10. Wet Swale #2 (Sood #11) 11. Filtering Practices 11.a Filtering Practices #1 (Good #12)	SEE WATE SEE WA	COLAMITY COMPT Description Do Not Reduc CUALITY COMPT Do Not Reduc	and area 0 decision of the state of the stat	Dush (in the property of the	00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	(ef)	Runoff Volume (cf)	20 20 40 40 60 60	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	University of the Control of the Con	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Remaining Phosphorus Load (bs.) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0	Countriesen Treatment to be Employe	d d	Nirogen Efficiency (19) 10. Wet Sv. 25 25 35 31. Filterin 30 30 45	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	
Practice 10. Wet Swale (Coastel Plain) 10. Wet Swale st (Socc #1) 10. Wet Swale #1 (Socc #1) 10. Wet Swale #2 (Socc #1) 11. Filtering Practice 11. Filtering Practice #1 (Socc #1) 11. Filtering Practice #1 (Socc #1) 11. Filtering Practice #1 (Socc #1)	SEE WATE. Over Pollutants by Impervious acres drained in the see acre	COLAMITY COMPT Description Do Not Reduc CUALITY COMPT Do Not Reduc	anada area 0 de decisión de la constitución de la c	Credit (acres) Credit (acres) Credit (acres) Credit (acres) Credit (acres)	00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	(ef)	Runoff Volume (cf)	20 20 40 40 60 60	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	University of the Control of the Con	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Remaining Phosphorus Load (bs.) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0	Netrocción Desentram Trestment to be Employe	RIMOVAL PROM	Nitrogen Efficiency (19	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	
Practice 10. Wet Swale (Coastel Plain) 10. Wet Swale st (Socc #1) 10. Wet Swale #1 (Socc #1) 10. Wet Swale #2 (Socc #1) 11. Filtering Practice 11. Filtering Practice #1 (Socc #1) 11. Filtering Practice #1 (Socc #1) 11. Filtering Practice #1 (Socc #1)	SEE WATE SEE WATE Use Pollutants by Use Impervious acres disagrants are and acres disagrants are and acres disagrants are and acres disagrants are and acres disagrants acres disagrants are acres	COLLEGE OF THE COLLEG	anterd area 0 discharge of the control of the contr	CHARLES ON CONTROL OF CONTROL OT CONTROL OF	00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	(ed)	Runoff Volume (cf)	20 20 20 40 40 60 60 65	Principionis Load from Updates (the Updates)	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Nitrode Notation Treatment to be Engloy	H RESERVAL FROM	Nerogen Efficiency (19 25 25 25 35 35 35 45 45 12. Constr	Neorge Recute Record Fractice Record F	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 Remaining (0.0) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	
Practice 10. Wet Swele (Coastal Plain) 10.4. Wet Swele st if from \$111 10.4. Wet Swele st if from \$111 11.5. Filtering Practices 11.4. Filtering Practices \$1 (From \$12) 11.6. Filtering Practice \$1 (From \$12) 11.6. Filtering Practice \$2 (From \$12) 12. Constructed Wetland	SEE WATE SEE WA	COLLEGE OF THE COLLEG	and area O o o o o o o o o o o o o o o o o o o	Order Communication Communicat	00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	(cd)	Runoff Volume (cf)	20 20 40 40 60 65 65 50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	000 000 000 000 000 000 000 000 000 00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Countries Treatment to be Employed	d d	Nizogen Efficiency (19) 10. Wet Sy 26 26 35 11. Filterin 30 45 45 12. Constructs	Newgen Load From Upstream (Inc.) **Control of the Control of the C	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 Remaining Narogen Load (Na.) 0.00 0.00 0.00 0.00 0.00 0.00 0.00	
Practice 10. Wet Swele (Coastal Plain) 10. Wet Swele still fillow \$11. 10. Wet Swele \$11. 10. Wet Swele \$11. 11. Filtering Practices 11. Filtering Practices 11. Filtering Practice \$1 (Sees \$12). 11. Filtering Practice \$2 (Sees \$12). 11. Filtering Practice \$2 (Sees \$12).	SEE WATE SEE WATE Uses Impervious sorce distinct int seed of the control of t	COLAMITY COMPANY Description Do Not Reduce Description Discontinuo Description Discontinuo anterd areas O de Autoritor O de Carella Carel	Credit Company Compa	00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	(cot)	Runoff Volume (cf)	20 20 40 40 60 65 65 50 50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	000 000 000 000 000 000 000 000 000 00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Downstream Treatment to be Engloy	I NOMOCOAL FROM	Nizogen Efficiency (19) 10. Wet SV 25 26 35 11. Filterin 30 45 45 12. Constr	Butter Precio	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00		
Practice 10. West Swalls (Constal Plain) 10. West Swalls at Affice #11. 10. West Swalls #1 Affice #11. 10. West Swalls #1 Affice #11. 11. Filtering Practices 11. a Filtering Practice #1 (Spec #12) 11. b Filtering Practice #1 (Spec #12) 12. Constructed Westland 24. Constructed Westland 24. Constructed Westland #1 (Spec #12) 25. Constructed Westland #1 (Spec #12) 26. Constructed Westland #1 (Spec #12) 27. Constructed Westland #1 (Spec #12)	SEE WATE SEE WATE Use SEE WATE Use WE position across discussion Met across across discussion SEE SEE SEE	COLAMITY COMPANY Description Do Not Reduce Description Discontinuo Description Discontinuo anterd areas O de Autoritor O de Carella Carel	Credit Company Compa	00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	(cot)	Runoff Volume (cf)	20 20 20 40 40 40 60 60 65 65 65 50 75	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Doublinean Treatment to be Employ	I REMOVAL PROM	Nirogen Efficiency (N) Wet Siv 25 25 35 36 11, Filterita 45 45 12, Constr 25 55 55	NAME OF RECORD OF THE PRACTICE	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00		
Practice 10. Wet Swale (Coastal Plain) 10. Yet Bushs \$1 floor \$11 10. Yet Bushs \$2 floor \$11 11. Filtering Practices 11.a Filtering Practices 11.b Filtering Practice \$2 (Spec \$12) 12. Constructed Wetland 2.a Constructed Wetland	SEE WATE SEE WATE Uses Impervious sorce distinct int seed of the control of t	Auto Volce to a volce	anterdaren O O O O O O O O O O O O O O O O O O O	Credit Computer	00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	(cot)	Runoff Volume (cf)	20 20 40 40 40 60 60 65 65 75 75	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Downstream Treatment to be Employed	d d	Ninopan Efficiency (v) 25 25 35 35 31, Filterian 30 45 45 12, Construction 25 55 55 55	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00	
Practice 10. Wet Swale (Coastal Plain) 10. Wet Swale (Soc #11) 10. Wet Swale #1 files #11 10. Wet Swale #1 files #11 11. Filtering Practices 11. a Filtering Practice #1 (Spec #12) 11. b Filtering Practice #1 (Spec #12) 12. Constructed Wetland 2.a Constructed Wetland 2.a Constructed Wetland	SEE WATE. SEE WATE. SEE WATE. SPENIOR SEES AND SEED AND SEES AND SEED AND SEES AN	Auto Volce to a volce	anterdaren O O O O O O O O O O O O O O O O O O O	Credit Composition Credit Composition Credit Composition Credit Composition Credit Composition Credit Credit Composition Credit	00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	(cot)	Runoff Volume (cf)	20 20 20 40 40 40 60 60 65 65 65 50 75	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Countries Treatment to be Employed	NUMERICAN PROM	Nirogen Efficiency (N) Wet Siv 25 25 35 36 11, Filterita 45 45 12, Constr 25 55 55	NAME OF RECORD OF THE PRACTICE	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00	

		cres draining to pond	0% runoff vo	olume reduction	0.00	0.00	0	0	0	45	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00	
13.b. Wet Pond #1 (Coastal Plain) (Spec #14)	turf acres drain	ning to wet pond	0% runoff vo	olume reduction	0.00	0.00	0	0	0	45	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00	
		cres draining to	0% runoff vi	niume reduction	0.00	0.00	0	0	0	75	0.00	0.00	0.00	0.00			40	0.00	0.00	0.00	0.00	
13.c. Wet Pond #2 (Spec #14)	tud norme drain	ning to wat pond	09K rupo#Fu	olumo roduction	0.00	0.00	0	0	0	76	0.00	0.00	0.00	0.00			40	0.00	0.00	0.00	0.00	
132.118.131.42.132.4.147	impervious ac			niume reduction	0.00	0.00	0	0	0	65	0.00	0.00	0.00	0.00			30	0.00	0.00	0.00	0.00	
13.d. Wet Pond #2 (Coastal Plain) (Spec #14)		ning to wet pond			0.00	0.00	^		0	05	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00	
(SORC #14)	ion acres drain	and so was some	OS IGIGII V	auma racocioni	0.00	0.00	·	Ů		- 60	0.00	0.00	0.00	0.00			30	0.00	0.00	0.00	0.00	
14. Manufactured BMP																						
		cres draining to vice	0% runoff vo	olume reduction	0.00	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00	
14. Insert Name of Device	turf acres dra	ining to device	0% runoff vo	olume reduction	0.00	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00	
						0.00																Ι—
				RVIOUS COVER		0.00																+
			101																			t
					AREA CHECK	OK.																
		BUCCBUCBUS	DEMOVAL D	V DOACTICES T	WAT DO NOT D	EDUCE RUNOFF V	OLUME IN D.A. E.	0.00														+
		1110011101100	TEMOTAL D			PHORUS REMOVAL		0.00														-
	SEE	WATER QUA	LITY COMP	PLIANCE TAB	FOR SITE C	OMPLIANCE CA	ALCULATIONS															
	-	1	-				-	-	+	-		-	+	+	 	 	l			-		+
		NITROGEN	REMOVAL B	Y PRACTICES T	HAT DO NOT R	EDUCE RUNDER V	OLUME IN D.A. F.	0.00					—	†		1						-
					TOTAL N	TROGEN REMOVAL	L IN D.A. E (Ib/Vr)	0.00														

50. 5 to						
Site Results						
	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	AREA CHECK
IMPERVIOUS COVER	0.00	0.00	0.00	0.00	0.00	OK.
IMPERVIOUS COVER TREATED	0.00	0.00	0.00	0.00	0.00	OK.
TURF AREA	0.00	0.00	0.00	0.00	0.00	OK.
TURF AREA TREATED	0.00	0.00	0.00	0.00	0.00	OK.
AREA CHECK	OK.	OK.	OK.	OK.	OK.	
Bl						
Phosphorus						
TOTAL TREATMENT VOLUME (cf)						
TOTAL PHOSPHORUS LOAD REDUCTION REQUIRED (LB/YEAR)	0.00					
RUNOFF REDUCTION (cf)						
PHOSPHORUS LOAD REDUCTION ACHIEVED (LB/YR)	0.00					
ADJUSTED POST-DEVELOPMENT PHOSPHORUS LOAD (TP) (lb/yr)	0.00					
REMAINING PHOSPHORUS LOAD REDUCTION (LB/YR) NEEDED	CONGRATULATION	S!! YOU EXCEEDED T	HE TARGET REDUCT	ION BY 0 LB/YEAR!!		
Nitrogen (for information purposes)						
TOTAL TREATMENT VOLUME (cf)	0					
RUNOFF REDUCTION (cf)	0					
NITROGEN LOAD REDUCTION ACHIEVED (LB/YR)						
ADJUSTED POST-DEVELOPMENT NITROGEN LOAD (TN) (lb/yr)	0.00					

		T	1 year storm	2 year storm	10 year storm	T	
Target Rainfall Event (in)			1-year storm 0.00	2-year storm 0.00	10-year storm 0.00		
Drainage Area A		0.00					
Drainage Area (acres) Runoff Reduction Volume (cf)		0.00					
, ,							
Drainage Area B		0.00					
Drainage Area (acres) Runoff Reduction Volume (cf)		0.00					
realion readotion volume (or)		Ū					
Drainage Area C		0.00					
Drainage Area (acres) Runoff Reduction Volume (cf)		0.00					
Drainage Area D Drainage Area (acres)		0.00					
Runoff Reduction Volume (cf)		0.00					
· ·							
<u>Drainage Area E</u> Drainage Area (acres)		0.00					
Runoff Reduction Volume (cf)		0.00					
Based on the use of Runoff Reduction	nractices in the sele	cted drainage areas	the enreadeheat cal	culates an adjusted B	V and adjusts	d Curve Number	-
Dussa on the use of Nullon Reduction	practices in the sele	orou uramaye areas,	and apreducified Call	omatos an aujusted R	Peveloped and adjuste	a Jui ve Number.	<u> </u>
Drainage Area A			A soils	B Soils	C Soils	D Soils	
Forest/Open Space undisturbed, pro space or reforested la		Area (acres) CN	0.00 30	0.00 55	0.00 70	0.00 77	
Managed Turf disturbed, graded for ya		Area (acres)	0.00	0.00	0.00	0.00	
mowed/managed		ĊN	39	61	74	80	
Impervious Cover		Area (acres) CN	0.00 98	0.00 98	0.00 98	0.00 98	
Impervious Cover		OIT	90	90	90	Weighted CN	s
						0	1000.00
	DV (in) with a	no Runoff Reduction	1-year storm 0.00	2-year storm 0.00	10-year storm 0.00		
	RV _{Developed} (in) with i	th Runoff Reduction	0.00	0.00	0.00		
	Developed (7	Adjusted CN	100	100	100		
Drainaga Araa B			A soils	P Soile	C Saila	D Soile	
Drainage Area B Forest/Open Space undisturbed, pro	otected forest/open	Area (acres)	A soils 0.00	B Soils 0.00	C Soils 0.00	D Soils 0.00	
space or reforested la		CN	30	55	70	77	
Managed Turf disturbed, graded for ya	ards or other turf to be	Area (acres) CN	0.00 39	0.00 61	0.00 74	0.00	
mowed/managed		Area (acres)	0.00	0.00	0.00	80 0.00	
Impervious Cover		CN	98	98	98	98	
						Weighted CN 0	1000.00
			1-year storm	2-year storm	10-year storm	0	1000.00
		no Runoff Reduction	0.00	0.00	0.00		
	RV _{Developed} (in) wi	th Runoff Reduction Adjusted CN	0.00 100	0.00 100	0.00 100		
		Aujusteu CN	100	100	100		
Drainage Area C			A soils	B Soils	C Soils	D Soils	
Forest/Open Space undisturbed, pro space or reforested la		Area (acres) CN	0.00 30	0.00 55	0.00 70	0.00 77	
Managed Turf disturbed, graded for ya		Area (acres)	0.00	0.00	0.00	0.00	
mowed/managed		CN Area (agree)	39	61	74	80	
Impervious Cover		Area (acres) CN	0.00 98	0.00 98	0.00 98	0.00 98	
						Weighted CN	s
			1-year storm	2-year storm	10-year storm	0	1000.00
	RV _{Developed} (in) with I	no Runoff Reduction	0.00	0.00	0.00		
	RV _{Developed} (in) wi	th Runoff Reduction	0.00	0.00	0.00		
		Adjusted CN	100	100	100		
Drainage Area D			A soils	B Soils	C Soils	D Soils	
Forest/Open Space undisturbed, pro		Area (acres)	0.00	0.00	0.00	0.00	
space or reforested la Managed Turf disturbed, graded for ya		CN Area (acres)	30 0.00	55 0.00	70 0.00	77 0.00	
Managed Turf disturbed, graded for ya mowed/managed	arus or orner turr to be	Area (acres) CN	39	61	74	80	
		Area (acres)	0.00	0.00	0.00	0.00	
Impervious Cover		CN	98	98	98	98 Weighted CN	S
				1		0	1000.00
			1-year storm	2-year storm	10-year storm		
	RV _{Developed} (in) with I	no Runoff Reduction	0.00	0.00	0.00		
ļ	KV _{Developed} (in) wi	th Runoff Reduction Adjusted CN	0.00 100	0.00 100	0.00 100		
		juotou Oit					
Drainage Area E	-4414 - 17	Area (22222)	A soils	B Soils	C Soils	D Soils	
Forest/Open Space undisturbed, pro space or reforested la		Area (acres) CN	0.00 30	0.00 55	0.00 70	0.00 77	
Space of reforested is			30	30	. 0		

Managed Turf disturbed, graded for yards or other turf to be	oe Area (acres)	0.00	0.00	0.00	0.00	
mowed/managed	CN	39	61	74	80	
-	Area (acres)	0.00	0.00	0.00	0.00	
Impervious Cover	CN	98	98	98	98	
					Weighted CN	S
					0	1000.00
		1-year storm	2-year storm	10-year storm		
RV _{Developed} (in) with	h no Runoff Reduction	0.00	0.00	0.00		
RV _{Developed} (in)	with Runoff Reduction	0.00	0.00	0.00		
	Adjusted CN	100	100	100		

Virginia Runoff Reduction Method New Development Worksheet -- v2.8 _2011Specs

Site Data Summary

Total Rainfall = 43 inches

Site Land Cover Summary

	A Soils	B Soils	C Soils	D Soils	Total	% of Total
Forest (acres)	0.00	0.00	0.00	0.00	0.00	0.00
Turf (acres)	0.00	0.00	0.00	0.00	0.00	0.00
Impervious (acres)	0.00	0.00	0.00	0.00	0.00	0.00
					0.00	0.00

Site Rv	0.00
Post Development Treatment Volume (ft3)	0
Post Development TP Load (lb/yr)	0.00
Post Development TN Load (lb/yr)	0.00
Total TP Load Reduction Required (lb/yr)	0.00

Total Runoff Volume Reduction (ft ³)	0
Total TP Load Reduction Achieved (lb/yr)	0
Total TN Load Reduction Achieved (lb/yr)	0.00
Adjusted Post Development TP Load (lb/yr)	0.00
Remaining Phosphorous Load Reduction (Lb/yr) Required	0.00

Drainage Area Summary

	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	Total
Forest (acres)	0.00	0.00	0.00	0.00	0.00	0.00
Turf (acres)	0.00	0.00	0.00	0.00	0.00	0.00
Impervious (acres)	0.00	0.00	0.00	0.00	0.00	0.00
						0.00

Drainage Area Compliance Summary

	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	Total
TP Load Red. (lb/yr)	0.00	0.00	0.00	0.00	0.00	0.00
TN Load Red. (lb/yr)	0.00	0.00	0.00	0.00	0.00	0.00

Channel and Flood Protection

	Weighted CN			10-year storm Adjusted CN
Target Rainfall Event (in)		0.00	0.00	0.00
D.A. A CN	0	100	100	100
D.A. B CN	0	100	100	100
D.A. C CN	0	100	100	100
D.A. D CN	0	100	100	100
D.A. E CN	0	100	100	100

Virginia Runoff Reduction Metho	d DoDoveler ···	ont Morlock	4 v2 7 Davis	April 2042			
	а керечеюрт	ent worksnee	t v2.7 Revised	April 2013	ı		
Site Data							
Project Name:							
Date:							
	data input cells						
	calculation cells						
	constant values						
Deat DeDevelorment Desirat 6.1			T		0.00		
Post-ReDevelopment Project & L	and Cover Into	rmation	I otal Dis	turbed Acreage	0.00		
Constants							
Constants							
Annual Rainfall (inches)	43						
Target Rainfall Event (inches)	1.00						
Phosphorus EMC (mg/L)	0.26		N	litrogen EMC (mg/L)	1.86		
Target Phosphorus Target Load (lb/acre/yr)	0.41						
PJ	0.90						
Pre-ReDevelopment Land Cover (acres)							
The Report September 2 and Corter (acros)	A soils	B Soils	C Soils	D Soils	Totals		
Forest/Open Space (acres) undisturbed,							
protected forest/open space or reforested land	0.00	0.00	0.00	0.00	0.00		
Managed Turf (acres) disturbed, graded for	0.00	0.00	0.00	0.00	0.00		
yards or other turf to be mowed/managed Impervious Cover (acres)	0.00	0.00	0.00	0.00	0.00		
impervious cover (acres)	0.00	0.00	0.00	Total	0.00		
	+			. Jui	0.00		
Post-ReDevelopment Land Cover (acres)							
	A soils	B Soils	C Soils	D Soils	Totals		
Forest/Open Space (acres) undisturbed,							
protected forest/open space or reforested land	0.00	0.00	0.00	0.00	0.00		
Managed Turf (acres) disturbed, graded for	0.00	0.00	0.00	0.00	0.00		
yards or other turf to be mowed/managed Impervious Cover (acres)	0.00	0.00 0.00	0.00	0.00	0.00		
impervious cover (acres)	0.00	0.00	0.00	Total	0.00		
Area Check	Okay	Okay	Okay	Okay	0.00		
Rv Coefficients							
	A soils	B Soils	C Soils	D Soils			
Forest/Open Space	0.02	0.03	0.04	0.05			
Managed Turf	0.15 0.95	0.20 0.95	0.22 0.95	0.25 0.95			
Impervious Cover	0.95	0.95	0.95	0.95			
Land Cover Summary	Listed	Adjusted ¹		Land Cover Summ	arv	Land Cover Summary	
Pre-ReDevelopment				Post-ReDevelopme	ent	Post-ReDevelopment New Impervio	us
Pre-ReDevelopment				Forest/Open Space		Post-ReDevelopment New Impervio	us
Forest/Open Space Cover (acres)	0.00	0.00		Forest/Open Space Cover (acres)	o.00	Post-ReDevelopment New Impervio	us
Forest/Open Space Cover (acres)				Forest/Open Space Cover (acres) Composite	0.00	Post-ReDevelopment New Impervio	us
Forest/Open Space Cover (acres) Composite Rv(forest)	0.00	0.00		Forest/Open Space Cover (acres) Composite Rv(forest)	0.00	Post-ReDevelopment New Impervio	us
Forest/Open Space Cover (acres)				Forest/Open Space Cover (acres) Composite Rv(forest) % Forest	0.00	Post-ReDevelopment New Impervio	us
Forest/Open Space Cover (acres) Composite Rv(forest) % Forest	0.00	0.00		Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf	0.00 0.00 0%	Post-ReDevelopment New Impervio	us
Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres)	0.00 0% 0.00	0.00 0% 0.00		Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres)	0.00 0.00 0% 0.00	Post-ReDevelopment New Impervio	us
Forest/Open Space Cover (acres) Composite Rv(forest) % Forest	0.00	0.00		Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(turf) % Managed Turf	0.00 0.00 0%	Post-ReDevelopment New Impervio	us
Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(furf) % Managed Turf	0.00 0% 0.00 0.00 0%	0.00 0% 0.00 0.00 0%		Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(turf) % Managed Turf ReDev. Impervious	0.00 0.00 0% 0.00 0.00 0.00		
Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(furf) % Managed Turf Impervious Cover (acres)	0.00 0% 0.00 0.00 0%	0.00 0% 0.00 0.00 0%		Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(turf) % Managed Turf ReDev. Impervious Cover (acres)	0.00 0.00 0% 0.00 0.00 0.00	New Impervious Cover (acres)	0.00
Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(turf) % Managed Turf Impervious Cover (acres) Rv(impervious)	0.00 0% 0.00 0.00 0% 0.00 0.00	0.00 0% 0.00 0.00 0% 0.00		Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(turf) % Managed Turf ReDev. Impervious Cover (acres) Rv(impervious)	0.00 0.00 0% 0.00 0.00 0% 0.00	New Impervious Cover (acres) Rv(impervious)	0.00
Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(furf) % Managed Turf Impervious Cover (acres)	0.00 0% 0.00 0.00 0%	0.00 0% 0.00 0.00 0%		Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(turf) % Managed Turf ReDev. Impervious Cover (acres) Rv(impervious) % Impervious	0.00 0.00 0% 0.00 0.00 0.00	New Impervious Cover (acres) Rv(impervious)	0.00
Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(furf) % Managed Turf Impervious Cover (acres) Rv(impervious) % Impervious	0.00 0% 0.00 0.00 0.00 0.00 0.00 0.95	0.00 0% 0.00 0.00 0.00 0.00 0.00 0.95		Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(turf) % Managed Turf ReDev. Impervious Cover (acres) Rv(Impervious) % Impervious Total ReDev. Site	0.00 0.00 0% 0.00 0.00 0% 0.00 0.00 0.95	New Impervious Cover (acres) Rv(impervious) % Impervious	0.00 0.95 Check Area
Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(turf) % Managed Turf Impervious Cover (acres) Rv(impervious)	0.00 0% 0.00 0.00 0% 0.00 0.00	0.00 0% 0.00 0.00 0% 0.00		Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(turf) % Managed Turf ReDev. Impervious Cover (acres) Rv(impervious) % Impervious	0.00 0.00 0% 0.00 0.00 0% 0.00	New Impervious Cover (acres) Rv(impervious)	0.00
Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(turf) % Managed Turf Impervious Cover (acres) Rv(impervious) % Impervious Total Site Area (acres)	0.00 0% 0.00 0.00 0.00 0.00 0.95 0%	0.00 0% 0.00 0.00 0.00 0.00 0.95 0%		Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(turf) % Managed Turf ReDev. Impervious Cover (acres) Rv(impervious) % Impervious Total ReDev. Site Area (acres)	0.00 0.00 0% 0.00 0.00 0.00 0.00 0.95	New Impervious Cover (acres) Rv(impervious) % Impervious Total New Dev. Site Area (acres)	0.00 0.95 Check Area
Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(turf) % Managed Turf Impervious Cover (acres) Rv(impervious) % Impervious Total Site Area (acres)	0.00 0% 0.00 0.00 0.00 0.00 0.95 0%	0.00 0% 0.00 0.00 0.00 0.00 0.95 0%		Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(turf) % Managed Turf ReDev. Impervious Cover (acres) Rv(impervious) Total ReDev. Site Area (acres) ReDev. Site Rv	0.00 0.00 0% 0.00 0.00 0.00 0.00 0.95	New Impervious Cover (acres) Rv(impervious) % Impervious Total New Dev. Site Area (acres)	0.00 0.95 Check Area
Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(turf) % Managed Turf Impervious Cover (acres) Rv(impervious) % Impervious Total Site Area (acres)	0.00 0% 0.00 0.00 0.00 0.00 0.95 0%	0.00 0% 0.00 0.00 0.00 0.00 0.95 0%		Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(turf) % Managed Turf ReDev. Impervious Cover (acres) Rv(impervious) % Impervious Total ReDev. Site Area (acres) ReDev. Site Rv ReDevelopment	0.00 0.00 0% 0.00 0.00 0.00 0.00 0.95	New Impervious Cover (acres) Rv(impervious) % Impervious Total New Dev. Site Area (acres) New Dev. Site Rv	0.00 0.95 Check Area
Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(furf) % Managed Turf Impervious Cover (acres) Rv(impervious) % Impervious Total Site Area (acres) Site Rv	0.00 0% 0.00 0.00 0.00 0.00 0.95 0% 0.00	0.00 0% 0.00 0.00 0.00 0.95 0% 0.00 0.00		Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(turf) % Managed Turf ReDev. Impervious Cover (acres) Rv(impervious) % impervious Total ReDev. Site Area (acres) ReDev. Site Rv Fost Rebevelopment Treatment Volume	0.00 0.00 0% 0.00 0.00 0.00 0.00 0.00 0	New Impervious Cover (acres) Rv(impervious) % Impervious Total New Dev. Site Area (acres) New Dev. Site Rv Post-Development Treatment	0.00 0.95 Check Area 0.00 0.95
Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(turf) % Managed Turf Impervious Cover (acres) Rv(impervious) % Impervious Total Site Area (acres)	0.00 0% 0.00 0.00 0.00 0.00 0.95 0.95	0.00 0% 0.00 0.00 0.00 0.95 0% 0.00 0.00		Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(turf) % Managed Turf ReDev. Impervious Cover (acres) Rv(impervious) % Impervious Total ReDev. Site Area (acres) ReDev. Site Rv Post- ReDevelopment Treatment Volume (accre-ft)	0.00 0.00 0% 0.00 0.00 0.00 0.00 0.95	New Impervious Cover (acres) Rv(impervious) % Impervious Total New Dev. Site Area (acres) New Dev. Site Rv	0.00 0.95 Check Area 0.00 0.95
Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(furf) % Managed Turf Impervious Cover (acres) Rv(impervious) % Impervious Total Site Area (acres) Site Rv	0.00 0% 0.00 0.00 0.00 0.00 0.95 0% 0.00	0.00 0% 0.00 0.00 0.00 0.95 0% 0.00 0.00		Forest/Open Space Cover (acres) Composite Rvf(rorest) % Forest Managed Turf Cover (acres) Composite Rv(turf) % Managed Turf ReDev. Impervious Cover (acres) Rv(impervious) % Impervious % Impervious Repev. Site Area (acres) ReDev. Site Rv Post- ReDevelopment Treatment Volume (acre-ft) Post-	0.00 0.00 0% 0.00 0.00 0.00 0.00 0.00 0	New Impervious Cover (acres) Rv(impervious) % Impervious Total New Dev. Site Area (acres) New Dev. Site Rv Post-Development Treatment	0.00 0.95 Check Area 0.00 0.95
Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(furf) % Managed Turf Impervious Cover (acres) Rv(impervious) Total Site Area (acres) Site Rv	0.00 0% 0.00 0.00 0.00 0.00 0.95 0% 0.00	0.00 0% 0.00 0.00 0.00 0.95 0% 0.00 0.00		Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(turf) % Managed Turf ReDev. Impervious Cover (acres) Rv(impervious) Total ReDev. Site Area (acres) ReDev. Site Rv Fost- ReDevelopment Treatment Volume (acre-fl) Fost- ReDevelopment Treatment Volume Treatment Volume	0.00 0.00 0% 0.00 0.00 0.00 0.00 0.00 0	New Impervious Cover (acres) Rv(impervious) % Impervious Total New Dev. Site Area (acres) New Dev. Site Rv Post-Development Treatment Volume (acre-ft)	0.00 0.95 Check Area
Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(furf) % Managed Turf Impervious Cover (acres) Rv(impervious) Ye Impervious Total Site Area (acres) Site Rv	0.00 0% 0.00 0.00 0.00 0.00 0.95 0% 0.00	0.00 0% 0.00 0.00 0.00 0.95 0% 0.00 0.00		Forest/Open Space Cover (acres) Corposite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(turf) % Managed Turf ReDev. Impervious Cover (acres) Rv(impervious) % Impervious Total ReDev. Site Area (acres) ReDev. Site Rv Post- ReDevelopment Treatment Volume (acre-ft) Post- ReDevelopment Treatment Volume (acre-ft) Treatment Volume (acre-ft) Treatment Volume (acre-ft) Coubic feet)	0.00 0.00 0% 0.00 0.00 0.00 0.00 0.00 0	New Impervious Cover (acres) Rv(impervious) % Impervious Total New Dev. Site Area (acres) New Dev. Site Rv Post-Development Treatment Volume (acre-ft)	0.00 0.95 Check Area 0.00 0.95
Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(furf) % Managed Turf Impervious Cover (acres) Rv(impervious) % Impervious Total Site Area (acres) Site Rv Pre-Development Treatment Volume (acre-ft)	0.00 0% 0.00 0.00 0.00 0.95 0.00 0.00 0.00	0.00 0% 0.00 0.00 0.00 0.95 0.00 0.00		Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(turf) % Managed Turf ReDev. Impervious Cover (acres) Rv(impervious) % Impervious Total ReDev. Site Area (acres) ReDev. Site Rv Post- ReDevelopment Treatment Volume (acre-ft) Post- ReDevelopment Treatment Volume (acre-ft) Post- ReDevelopment Treatment Volume (acre-ft) Post- ReDevelopment Treatment Volume (acre-ft) Post- ReDevelopment Treatment Volume (acre-ft) Post- ReDevelopment Treatment Volume (cubic feet)	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	New Impervious Cover (acres) Rv(impervious) % Impervious Total New Dev. Site Area (acres) New Dev. Site Rv Post-Development Treatment Volume (acre-ft)	0.00 0.95 Check Area 0.00 0.95
Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(furf) % Managed Turf Impervious Cover (acres) Rv(impervious) % Impervious Total Site Area (acres) Site Rv Pre-Development Treatment Volume (acre-ft) Pre-Development Treatment Volume (cubic feet)	0.00 0% 0.00 0.00 0.00 0.95 0% 0.00 0.00	0.00 0% 0.00 0.00 0.00 0.95 0% 0.00 0.00		Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(turf) % Managed Turf ReDev. Impervious Cover (acres) Reflev. Impervious % Impervious % Impervious Reflev. Site Rv Fost- ReDev. Site Rv Fost- ReDevelopment Treatment Volume (acre-ft) Post- ReDevelopment ReDevelopment ReDevelopment ReDevelopment ReDevelopment	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	New Impervious Cover (acres) Rv(impervious) % Impervious Total New Dev. Site Area (acres) New Dev. Site Rv Post-Development Treatment Volume (acre-ft) Post-Development Treatment Volume (cubic feet)	0.00 0.95 Check Area 0.00 0.95
Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(furf) % Managed Turf Impervious Cover (acres) Rv(impervious) % Impervious Total Site Area (acres) Site Rv Pre-Development Treatment Volume (acre-ft)	0.00 0% 0.00 0.00 0.00 0.95 0.00 0.00 0.00	0.00 0% 0.00 0.00 0.00 0.95 0.00 0.00		Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(turf) % Managed Turf ReDev. Impervious Cover (acres) Rv(impervious) % Impervious Total ReDev. Site Area (acres) ReDev. Site Rv Post- ReDevelopment Treatment Volume (acre-ft) Post- ReDevelopment Treatment Volume (acre-ft) Post- ReDevelopment Treatment Volume (acre-ft) Post- ReDevelopment Treatment Volume (acre-ft) Post- ReDevelopment Treatment Volume (acre-ft) Post- ReDevelopment Treatment Volume (cubic feet)	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	New Impervious Cover (acres) Rv(impervious) % Impervious Total New Dev. Site Area (acres) New Dev. Site Rv Post-Development Treatment Volume (acre-ft)	0.00 0.95 Check Area 0.00 0.95
Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(furf) % Managed Turf Impervious Cover (acres) Rv(impervious) % Impervious Total Site Area (acres) Site Rv Pre-Development Treatment Volume (acre-ft) Pre-Development Treatment Volume (cubic feet) Pre-Development Load (TP) (lb/yr)	0.00 0% 0.00 0.00 0.00 0.00 0.00 0.00 0	0.00 0% 0.00 0.00 0.00 0.95 0% 0.00 0.00	Marines & Section	Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(turf) % Managed Turf ReDev. Impervious Cover (acres) Rv(impervious) % Impervious Total ReDev. Site Rv Post- ReDev. Site Rv Post- ReDevelopment Treatment Volume (acre-ft) Post- ReDevelopment Treatment Volume (cubic feet)	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	New Impervious Cover (acres) Rv(impervious) % Impervious Total New Dev. Site Area (acres) New Dev. Site Rv Post-Development Treatment Volume (acre-ft) Post-Development Treatment Volume (cubic feet)	0.00 0.95 Check Area 0.00 0.95
Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(furf) % Managed Turf Impervious Cover (acres) Rv(impervious) % Impervious Total Site Area (acres) Site Rv Pre-Development Treatment Volume (acre-ft) Pre-Development Treatment Volume (cubic feet) Pre-Development Load (TP) (fb/yr) *Adjusted Land Cover Summary reflects the present the service of the	0.00 0% 0.00 0.00 0.00 0.00 0.00 0.00 0	0.00 0% 0.00 0.00 0.00 0.95 0% 0.00 0.00	Maximum % Reduc	Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(turf) % Managed Turf ReDev. Impervious Cover (acres) Rv(impervious) Total ReDev. Site Area (acres) ReDev. Site Rv Post- ReDevelopment Treatment Volume (acre-ft) Fost- ReDevelopment Treatment Volume (cubic feet) Fost- ReDevelopment Treatment Volume (cubic feet) Fost- ReDevelopment Treatment Volume (cubic feet) Fost- ReDevelopment Load (TP) (lb/yr)	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	New Impervious Cover (acres) Rv(impervious) % Impervious Total New Dev. Site Area (acres) New Dev. Site Rv Post-Development Treatment Volume (acre-ft) Post-Development Treatment Volume (cubic feet)	0.00 0.95 Check Area 0.00 0.95
Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(furf) % Managed Turf Impervious Cover (acres) Rv(impervious) % Impervious Total Site Area (acres) Site Rv Pre-Development Treatment Volume (acre-ft) Pre-Development Treatment Volume (cubic feet) Pre-Development Load (TP) (lb/yr) 1/Adjusted Land Cover Summary reflects the pr land cover minus the pervious land cover (forest	0.00 0% 0.00 0.00 0.00 0.00 0.00 0.00 0	0.00 0% 0.00 0.00 0.00 0.95 0% 0.00 0.00	Maximum % Reduc	Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(turf) % Managed Turf ReDev. Impervious Cover (acres) Rv(impervious) % Impervious Total ReDev. Site Rv Post- ReDev. Site Rv Post- ReDevelopment Treatment Volume (acre-ft) Post- ReDevelopment Treatment Volume (cubic feet)	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	New Impervious Cover (acres) Rv(impervious) % Impervious Total New Dev. Site Area (acres) New Dev. Site Rv Post-Development Treatment Volume (acre-ft) Post-Development Treatment Volume (cubic feet)	0.00 0.95 Check Area 0.00 0.95
Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(furf) % Managed Turf Impervious Cover (acres) Rv(impervious) % Impervious Total Site Area (acres) Site Rv Pre-Development Treatment Volume (acre-ft) Pre-Development Treatment Volume (cubic feet) Pre-Development Load (TP) (fb/yr) *Adjusted Land Cover Summary reflects the present the service of the	0.00 0% 0.00 0.00 0.00 0.00 0.00 0.00 0	0.00 0% 0.00 0.00 0.00 0.95 0% 0.00 0.00	Pre-R	Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(turf) % Managed Turf ReDev. Impervious Cover (acres) Rv(impervious) % Impervious Total ReDev. Site Area (acres) ReDev. Impervious Total ReDev. Site Area (acres) ReDev. Site ReDevelopment Treatment Volume (acre-ft) Post- ReDevelopment Treatment Volume (acre-ft) Post- ReDevelopment Treatment Volume (acre-ft) Fost- ReDevelopment Treatment Volume (acre-ft) Load (TP) (lb/yr)	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	New Impervious Cover (acres) Rv(impervious) % Impervious Total New Dev. Site Area (acres) New Dev. Site Rv Post-Development Treatment Volume (acre-ft) Post-Development Treatment Volume (cubic feet) Post-Development Load (TP) (ib/yr)	0.00 0.95 Check Area 0.00 0.95
Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(furf) % Managed Turf Impervious Cover (acres) Rv(impervious) % Impervious Total Site Area (acres) Site Rv Pre-Development Treatment Volume (acre-ft) Pre-Development Treatment Volume (reubic feet) Pre-Development Treatment Volume (cubic feet) Pre-Development Load (TP) (lb/yr)	0.00 0% 0.00 0.00 0.00 0.00 0.00 0.00 0	0.00 0% 0.00 0.00 0.00 0.95 0% 0.00 0.00	Pre-R	Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(turf) % Managed Turf ReDev. Impervious Cover (acres) Rv(impervious) Total ReDev. Site Area (acres) ReDev. Site Rv Post- ReDevelopment Treatment Volume (acre-ft) Fost- ReDevelopment Load (TP) (lib/yr) ttion Required Below eDevelopment Load uction Required for	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	New Impervious Cover (acres) Rv(impervious) % Impervious Total New Dev. Site Area (acres) New Dev. Site Rv Post-Development Treatment Volume (acre-ft) Post-Development Treatment Volume (cubic feet) Post-Development Load (TP) (ib/yr)	0.00 0.95 Check Area 0.00 0.95
Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(furf) % Managed Turf Impervious Cover (acres) Rv(impervious) % Impervious Total Site Area (acres) Site Rv Pre-Development Treatment Volume (acre-ft) Pre-Development Treatment Volume (cubic feet) Pre-Development Load (TP) (lb/yr) *Indiputed Land Cover Summary reflects the predict over minus the pervious land cover (forest managed turf) acreage proposed for new inpervious acreage (minus the acreage of new impervious cardeage (minus the acreage of new impervious creduction requirement for the new impervious creduction requirement for the new impervious creduction requirement for the new impervious coreduction req	0.00 0% 0.00 0.00 0.00 0.00 0.00 0.00 0	0.00 0% 0.00 0.00 0.00 0.95 0% 0.00 0.00	Pre-R	Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(turf) % Managed Turf ReDev. Impervious Cover (acres) Rv(impervious) % Impervious Total ReDev. Site Area (acres) ReDev. Impervious Total ReDev. Site Area (acres) ReDev. Site ReDevelopment Treatment Volume (acre-ft) Post- ReDevelopment Treatment Volume (acre-ft) Post- ReDevelopment Treatment Volume (acre-ft) Fost- ReDevelopment Treatment Volume (acre-ft) Load (TP) (lb/yr)	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	New Impervious Cover (acres) Rv(impervious) % Impervious Total New Dev. Site Area (acres) New Dev. Site Rv Post-Development Treatment Volume (acre-ft) Post-Development Treatment Volume (cubic feet) Post-Development Load (TP) (ib/yr)	0.00 0.95 Check Area 0.00 0.95
Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(furf) % Managed Turf Impervious Cover (acres) Rv(impervious) % Impervious Total Site Area (acres) Site Rv Pre-Development Treatment Volume (acre-ft) Pre-Development Treatment Volume (reubic feet) Pre-Development Treatment Volume (cubic feet) Pre-Development Treatment Volume (acre-ft)	0.00 0% 0.00 0.00 0.00 0.00 0.00 0.00 0	0.00 0% 0.00 0.00 0.00 0.95 0% 0.00 0.00	TP Load Rede	Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(turf) % Managed Turf Semanaged Turf ReDev. Impervious Cover (acres) Rv(impervious) Rv(impervious) Rebev. Site Rv Post- ReDev. Site Rv Post- ReDevelopment Treatment Volume (acre-ft) Post- ReDevelopment Treatment Volume (acre-ft) Fost- ReDevelopment Treatment Volume (acre-ft) Fost- ReDevelopment Treatment Volume (cubic feet) Fost- ReDevelopment Treatment Volume (cubic feet) Fost- ReDevelopment Load (TP) (lb/yr) L	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	New Impervious Cover (acres) Rv(impervious) % Impervious Total New Dev. Site Area (acres) New Dev. Site Rv Post-Development Treatment Volume (acre-ft) Post-Development Treatment Volume (cubic feet) Post-Development Load (TP) (ib/yr)	0.00 0.95 Check Area 0.00 0.95
Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(furf) % Managed Turf Impervious Cover (acres) Rv(impervious) % Impervious Total Site Area (acres) Site Rv Pre-Development Treatment Volume (acre-ft) Pre-Development Treatment Volume (cubic feet) Pre-Development Load (TP) (lb/yr) **Adjusted Land Cover Summary reflects the pr land cover minus the pervious land cover (forest managed tur) acreage proposed for new impervious creduction requirement for the new impervious careduction requirement for the new impervious creduction requirement for the new imp	0.00 0% 0.00 0.00 0.00 0.00 0.00 0.00 0	0.00 0% 0.00 0.00 0.00 0.95 0% 0.00 0.00	TP Load Rede	Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(turf) % Forest Managed Turf Rober (acres) Rober (acres) Rv(impervious Cover (acres) Rv(impervious) % Impervious Total ReDev. Site Area (acres) ReDev. Site Rv Post- ReDevelopment Treatment Volume (acre-ft) Post- ReDevelopment Treatment Volume (acre-ft) Post- ReDevelopment Treatment Volume (cubic feet) Post- ReDevelopment Load (TP) (lib/yr) tion Required Below eDevelopment Load uction Required for reloped Area (lib/yr)	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	New Impervious Cover (acres) Rv(impervious) % Impervious Total New Dev. Site Area (acres) New Dev. Site Rv Post-Development Treatment Volume (acre-ft) Post-Development Treatment Volume (cubic feet) Post-Development Load (TP) (ib/yr)	0.00 0.95 Check Area 0.00 0.95
Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(furf) % Managed Turf Impervious Cover (acres) Rv(impervious) % Impervious Total Site Area (acres) Site Rv Pre-Development Treatment Volume (acre-ft) Pre-Development Treatment Volume (cubic feet) Pre-Development Load (TP) (lb/yr) **Adjusted Land Cover Summary reflects the pr land cover minus the pervious land cover (forest managed tur) acreage proposed for new impervious creduction requirement for the new impervious careduction requirement for the new impervious creduction requirement for the new imp	0.00 0% 0.00 0.00 0.00 0.00 0.00 0.00 0	0.00 0% 0.00 0.00 0.00 0.95 0% 0.00 0.00	TP Load Rede	Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(turf) % Managed Turf Semanaged Turf ReDev. Impervious Cover (acres) Rv(impervious) Rv(impervious) Rebev. Site Rv Post- ReDev. Site Rv Post- ReDevelopment Treatment Volume (acre-ft) Post- ReDevelopment Treatment Volume (acre-ft) Fost- ReDevelopment Treatment Volume (acre-ft) Fost- ReDevelopment Treatment Volume (cubic feet) Fost- ReDevelopment Treatment Volume (cubic feet) Fost- ReDevelopment Load (TP) (lb/yr) L	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	New Impervious Cover (acres) Rv(impervious) % Impervious Total New Dev. Site Area (acres) New Dev. Site Rv Post-Development Treatment Volume (acre-ft) Post-Development Treatment Volume (cubic feet) Post-Development Load (TP) (ib/yr)	0.00 0.95 Check Area 0.00 0.95
Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(furf) % Managed Turf Impervious Cover (acres) Rv(impervious) % Impervious Total Site Area (acres) Site Rv Pre-Development Treatment Volume (acre-ft) Pre-Development Treatment Volume (cubic feet) Pre-Development Load (TP) (lb/yr) *Indiputed Land Cover Summary reflects the predict over minus the pervious land cover (forest managed turf) acreage proposed for new inpervious acreage (minus the acreage of new impervious cardeage (minus the acreage of new impervious creduction requirement for the new impervious creduction requirement for the new impervious creduction requirement for the new impervious coreduction req	0.00 0% 0.00 0.00 0.00 0.00 0.00 0.00 0	0.00 0% 0.00 0.00 0.00 0.95 0% 0.00 0.00	TP Load Rede	Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(turf) % Forest Managed Turf Rober (acres) Rober (acres) Rv(impervious Cover (acres) Rv(impervious) % Impervious Total ReDev. Site Area (acres) ReDev. Site Rv Post- ReDevelopment Treatment Volume (acre-ft) Post- ReDevelopment Treatment Volume (acre-ft) Post- ReDevelopment Treatment Volume (cubic feet) Post- ReDevelopment Load (TP) (lib/yr) tion Required Below eDevelopment Load uction Required for reloped Area (lib/yr)	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	New Impervious Cover (acres) Rv(impervious) % Impervious Total New Dev. Site Area (acres) New Dev. Site Rv Post-Development Treatment Volume (acre-ft) Post-Development Treatment Volume (cubic feet) Post-Development Load (TP) (ib/yr)	0.00 0.95 Check Area 0.00 0.95
Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(furf) % Managed Turf Impervious Cover (acres) Rv(impervious) % Impervious Total Site Area (acres) Site Rv Pre-Development Treatment Volume (acre-ft) Pre-Development Treatment Volume (cubic feet) Pre-Development Load (TP) (lb/yr) 1Adjusted Land Cover Summary reflects the pr land cover minus the pervious land cover (forest managed turf) acreage proposed for new inpervious divisited total acreage is consistent with the Post acreage (minus the acreage of new impervious creduction requirement for the new impervious creduction requirement for the new impervious coreduction	0.00 0% 0.00 0.00 0.00 0.00 0.00 0.00 0	0.00 0% 0.00 0.00 0.00 0.95 0% 0.00 0.00	Pre-R TP Load Rede Rede Total Load F	Forest/Open Space Cover (acres) Composite Rv(forest) % Forest Managed Turf Cover (acres) Composite Rv(turf) % Forest Managed Turf Rober (acres) Rober (acres) Rv(impervious Cover (acres) Rv(impervious) % Impervious Total ReDev. Site Area (acres) ReDev. Site Rv Post- ReDevelopment Treatment Volume (acre-ft) Post- ReDevelopment Treatment Volume (acre-ft) Post- ReDevelopment Treatment Volume (cubic feet) Post- ReDevelopment Load (TP) (lib/yr) tion Required Below eDevelopment Load uction Required for reloped Area (lib/yr)	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	New Impervious Cover (acres) Rv(impervious) % Impervious Total New Dev. Site Area (acres) New Dev. Site Rv Post-Development Treatment Volume (acre-ft) Post-Development Treatment Volume (cubic feet) Post-Development Load (TP) (ib/yr)	0.00 0.95 Check Area 0.00 0.95

Drainage Area A		1	г		1			1	1										
Drainage Area A Drainage Area A Land Cover (acres	0																		
Forest/Open Space (acres) undisturbed, protected forest/open	A soils B Soils	C Soils D Soils	Totals	Land Cover Rv															
space or reforested land Managed Turf (acres) – disturbed,	0.00 0.00	0.00 0.00	0.00	0.00															
graded for yards or other turf to be moved/managed	0.00 0.00	0.00 0.00	0.00	0.00															
Impervious Cover (acres)	0.00 0.00	0.00 0.00 Total	0.00	0.00		Post Devel	opment Treatm	ent Volume (cf)	0										
Apply Runoff Reduction P	ractices to Reduce Tr	eatment Volume & Po	ost-Develor	ment Load in	Drainage Are	a A										Narogen			
					Volume from Upstream RR	Runoff	Remaining		Phosphorus Load from Upstream RR	Untreated Phosphorus	Phosphorus	Remaining Phosphorus				Load from Upstream RR	Untreated	Nitrogen	Remaining
Credit	Unit	Description of Credit	Credit	Credit Area (acres)	Practice (cf)	Reduction (cf)	Runoff Volume (cf)	Efficiency (%)	Practices (lbs)	Load to Practice (lbs.)	Removed By Practice (lbs.)	Load (lbs.)	Downstream Treatment to be Employed		Nitrogen Efficiency (%)	Practices	Untreated Nitrogen Load to Practice (lbs.)	Practice (lbs.)	Nitrogen Load (lbs.)
1. Vegetated Roof															1. Green Roof				
1.a. Vegetated Roof #1 (Spec #5)	acres of green roof	45% runoff volume reduction	0.45	0.00	0	0	0		0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00
1.b. Vegetated Roof #2 (Spec #5)	acres of green roof	60% runoff volume reduction	0.60	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00
2. Rooftop Disconnection		roor and the state and other													2. Impervious Su	rface Disconne	ection		
2.a. Simple Disconnection to A/B Soils (Spec #1) 2.b. Simple Disconnection to C/D	impervious acres disconnectes	50% runoff volume reduction for treated area 25% runoff volume reduction	0.50	0.00	0	0	0		0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00
Soils (Spec #1) 2.c. To Soil Amended Filter Path as	impervious acres disconnectes	for treated area	0.25	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00
per specifications (existing C/D soils) (Spec #4)	impervious acres disconnecter	50% runoff volume reduction for treated area	0.50	0.00	0	0	0		0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00
2.d. To Dry Well or French Drain #1 (Microinfiliration #1) (Spec #8)	impervious acres disconnectes	50% runoff volume reduction for treated area	0.50	0.00	0	0	0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00
2.e. To Dry Well or French Drain #2 (Micro-Infiltration #2) (Spec #8) 2.f. To Rain Garden #1 (Micro-	impervious acres disconnectes	90% runoff volume reduction for treated area	0.90	0.00	0	0	0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00
Bioretention #1) (Spec #9) 2.g. To Rain Garden #2 (Micro-	impervious acres disconnectes	d 40% of volume captured 80% runoff volume reduction	0.40	0.00	0	0	0	25	0.00	0.00	0.00	0.00			40	0.00	0.00	0.00	0.00
Bioretention #2\ (Spec #9\)	impervious acres disconnectes	d for treated area based on tank size and	0.80	0.00	0	0	0	50	0.00	0.00	0.00	0.00			60	0.00	0.00	0.00	0.00
2.h. To Rainwater Harvesting (Spec #6)	impervious acres captured	design spreadsheet (See Soec #6)	0.00	0.00	0	0	0		0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00
2.j. To Stormwater Planter (Urban Bioretention) (Spec #9. Appendix A)	impervious acres disconnecter	40% runoff volume reduction for treated area	0.40	0.00	0	0	0	25	0.00	0.00	0.00	0.00			40	0.00	0.00	0.00	0.00
3. Permeable Pavement															3. Permeable Par	vement			
3.a. Permeable Pavement #1 (Spec #	acres of permeable pavement acres of "external" (upgradient	*																	
3.b. Permeable Pavement #2 (Spec #	7		0.45	0.00	0	0	0	25	0.00	0.00	0.00	0.00			25	0.00	0.00	0.00	0.00
	acres of permeable pavement	75% runoff volume reduction	0.75	0.00	0	0	0	25	0.00	0.00	0.00	0.00			25	0.00	0.00	0.00	0.00
4. Grass Channel	impervious acres draining to														4. Grass Channe				
4.a. Grass Channel A/B Soils (Spec #3)	grass channels turf acres draining to grass	20% runoff volume reduction	0.20	0.00	0	0	0	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00
	channels impervious acres draining to	20% runoff volume reduction	0.20	0.00	0	0	0	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00
4.b. Grass Channel C/D Soils (Spec #3	grass channels turf acres draining to grass channels	10% runoff volume reduction	0.10	0.00	0	0	0	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00
4.c. Grass Channel Compost	impervious acres draining to	10% runoff volume reduction	0.10	0.00	0	0	0	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00
Amended Soils as per specs (see Spec #4)	grass channels turf acres draining to grass	30% runoff volume reduction	0.20	0.00	0	0	0	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00
	channels	30% rurott volume recucsor	0.20	0.00	۰	- 0	ů	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00
5. Drv Swale	Impervious acres draining to di	v													5. Dry Swale				
5.a. Dry Swale #1 (Spec #10)	swale	40% runoff volume reduction	0.40	0.00	0	0	0	20	0.00	0.00	0.00	0.00			25	0.00	0.00	0.00	0.00
	turf acres draining to dry swale impervious acres draining to dr	40% runoff volume reduction	0.40	0.00	0	0	0	20	0.00	0.00	0.00	0.00			25	0.00	0.00	0.00	0.00
5.b. Dry Swale #2 (Spec #10)	swale	60% runoff volume reduction	0.60	0.00	0	0	0	40	0.00	0.00	0.00	0.00			35	0.00	0.00	0.00	0.00
	turf acres draining to dry swale	60% runoff volume reduction	0.60	0.00	0	0	0	40	0.00	0.00	0.00	0.00			35	0.00	0.00	0.00	0.00
6. Bioretention	impervious acres draining to														6. Bioretention				
6.a. Bioretention #1 or Urban Bioretention (Spec #9)	bioretention turf acres draining to	40% runoff volume reduction	0.40	0.00	0	0	0	25	0.00	0.00	0.00	0.00			40	0.00	0.00	0.00	0.00
	bioretention impervious acres draining to	40% runoff volume reduction	0.40	0.00	0	0	0	25	0.00	0.00	0.00	0.00			40	0.00	0.00	0.00	0.00
6.b. Bioretention #2 (Spec #9)	bioretention turf acres draining to	80% runoff volume reduction	0.80	0.00	0	0	0	50	0.00	0.00	0.00	0.00			60	0.00	0.00	0.00	0.00
	bioreferition	80% runoff volume reduction	0.80	0.00	0	0	0	50	0.00	0.00	0.00	0.00			60	0.00	0.00	0.00	0.00
7. Infiltration	impervious acres draining to														7. Infiltration				
7.a. Infiltration #1 (Spec #8)	infiltration	50% runoff volume reduction	0.50	0.00	0	0	0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00
	turf acres draining to infiltration impervious acres draining to infiltration	n 50% runoff volume reduction	0.50	0.00	0	0	0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00
7.b. Infiltration #2 (Spec #8)			0.90	0.00	0	0	0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00
	turf acres draining to infiltration	90% runoff volume reduction	0.90	0.00	0	0		25			0.00				15				
8. Extended Detention Pond	impervious acres draining to							•								0.00	0.00	0.00	
8.a. ED #1 (Spec #15)															8. Extended Dete	0.00 ention Pond	0.00	0.00	
	ED	0% runoff volume reduction	0.00	0.00	0	0	0	15	0.00	0.00	0.00	0.00			10	0.00 ention Pond	0.00	0.00	0.00
	turf acres draining to ED	0% runoff volume reduction	0.00	0.00	0	0	0	15	0.00	0.00	0.00	0.00			10	0.00 ention Pond 0.00	0.00	0.00	0.00
8.b. ED #2 (Spec #15)	turf acres draining to ED impervious acres draining to ED	0% runoff volume reduction	0.00	0.00	0	0	0	15	0.00	0.00	0.00	0.00			10	0.00 ention Pond 0.00 0.00	0.00	0.00	0.00
8.b. ED #2 (Spec #15)	turf acres draining to ED	0% runoff volume reduction	0.00	0.00	0	0	0		0.00 0.00 0.00		0.00	0.00			10	0.00	0.00		0.00
8.b. ED #2 (Spec #15) 9. Sheetflow to Filter/Open Space	turf acres draining to ED impervious acres draining to ED turf acres draining to ED impervious acres draining to	0% runoff volume reduction 15% runoff volume reduction 15% runoff volume reduction 75% runoff volume reduction	0.00	0.00	0 0	0	0		0.00		0.00	0.00			10	0.00			0.00
Sheetflow to Filter/Open Space A. Sheetflow to Corporation Area	turf acres draining to ED impervious acres draining to ED urf acres draining to ED urf acres draining to ED impervious acres draining to conserved open scale acres draining to conserved acres draining to conserved.	0% runoff volume reduction 15% runoff volume reduction 15% runoff volume reduction 75% runoff volume reduction for treated area d 75% runoff volume reduction	0.00 0.15 0.15	0.00	0	0	0		0.00		0.00	0.00			10	0.00	0.00 0.00 rea or Fiter Strio		0.00
9. Sheetflow to Filter/Open Space	turf acres draining to ED impenvious acres draining to ED urf acres draining to ED urf acres draining to Consensed open space turf acres draining to consense open space impenvious acres draining to consense open space	O'ls runoff volume reduction 15% runoff volume reduction 15% runoff volume reduction 75% runoff volume reduction 75% runoff volume reduction 16 resided area 75% runoff volume reduction 175% runoff volume reduction 175% runoff volume reduction	0.00 0.15 0.15 0.75	0.00	0	0	0		0.00 0.00 0.00	0.00	0.00	0.00			10	0.00 0.00 0.00 0.00	0.00 0.00 rea or Fiter Strio 0.00	0.00	0.00
3. Sheetflow to Fiter/Open Space 9.a. Sheetflow to Corservation Area with A/B Soils (Spec #2) 9.b. Sheetflow to Corservation Area 9.b. Sheetflow to Corservation Area	auf acres draining to ED impervious acres draining to ED auf acres draining to ED auf acres draining to ED impervious acres draining to conserved ones seaso up acres draining to conserved open space impervious acres draining to conserved open space auf acres draining to conserved open space	0% nunoff volume reduction 15% nunoff volume reduction 15% nunoff volume reduction 15% nunoff volume reduction 75% nunoff volume reduction 50° nunoff volume reduction for treated area 50° nunoff volume reduction 50° nunoff volume reduction	0.00 0.15 0.15 0.75 0.75	0.00 0.00 0.00 0.00	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0		0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00			10	0.00 0.00 0.00 0.00 0.00	0.00 0.00 rea or Fiter Strin 0.00 0.00	0.00	0.00
Sheetflow to Fiter/Doen Scace Sa. Sheetflow to Conservation Area with A/B Solis (Spec #2) Sheetflow to Conservation Area with CID Solis (Spec #2)	auf acres draining to ED impervious acres draining to ED auf acres draining to ED auf acres draining to ED impervious acres draining to conserved open space impervious acres draining to conserved open space impervious acres draining to conserved open space impervious acres draining to conserved open space impervious acres draining to conserved open space impervious acres draining to conserved open space impervious acres draining to conserved open space impervious acres draining to impervious acres draining to	0% nunoff volume reduction 15% nunoff volume reduction 15% nunoff volume reduction 75% nunoff volume reduction for resisted area 25% nunoff volume reduction for treated area 50% nunoff volume reduction for treated area 50% nunoff volume reduction for treated area	0.00 0.15 0.15 0.75 0.75 0.50	0.00 0.00 0.00 0.00	0	0	0		0.000 0.000 0.000 0.000 0.000 0.000	0.00	0.00 0.00 0.00 0.00	0.00			10	0.00 0.00 0.00 0.00	0.00 0.00 rea or Fiter Strio 0.00	0.00	0.00
Sheetflow to Filter/Ocen Scace Sheetflow to Consension Area with AIB Solis (Space 92) Sheetflow to Consension Area with CID Solis (Space 92) Sheetflow to Consension Area with CID Solis (Space 92) Sheetflow to Viscolated Filter	but acres draining to ED impervious acres draining to ED impervious acres draining to ED surf acres draining to ED impervious acres draining to ED impervious acres draining to consense consensed date state of the impervious acres draining to consense open space tarf acres draining to consenve open space tarf acres draining to conserve open space tarf acres draining to conserve open space	Olis ranoff volume reduction 15% ranoff volume ranoff volume ranoff volume 15% ranoff volume ranoff volume 15% ranoff volume ranoff volume 15% ranoff volume ranoff volume 15% ranoff volume ranoff volume 15% ranoff volume ranof	0.00 0.15 0.15 0.75 0.75	0.00 0.00 0.00 0.00 0.00 0.00 0.00	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0	0		0,000 0,000 0,000 0,000 0,000 0,000 0,000	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00	0.00			10	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00	
Sheetflow to Fiter/Doen Scace Sa. Sheetflow to Conservation Area with A/B Solis (Spec #2) Sheetflow to Conservation Area with CID Solis (Spec #2)	suf acres draining to ED impervious acres draining to ED impervious acres draining to ED suf acres draining to ED impervious acres draining to ED impervious acres draining to Conserve open space impervious acres draining to Conserve open space suf acres draining to Conserve open space impervious acres draining to Conserve open space impervious acres draining to Conserve open space impervious acres draining to Conserve open space	Oth, ranoff volume reduction 15% naroff volume reduction 15% naroff volume reduction 15% naroff volume reduction for treated area 25% naroff volume reduction 55% naroff volume reduction	0.00 0.15 0.15 0.75 0.75 0.50 0.50	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0 0 0 0	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0.000 0.000 0.000 0.000 0.000 0.000	0.00 0.00 0.00 0.00	0.000 0.000 0.000 0.000 0.000	0.00			10	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00	
Sheetflow to Filter/Ocen Scace Sheetflow to Consension Area with AIB Solis (Space 92) Sheetflow to Consension Area with CID Solis (Space 92) Sheetflow to Consension Area with CID Solis (Space 92) Sheetflow to Viscolated Filter	suf acres draining to ED impervious acres draining to ED impervious acres draining to ED suf acres draining to ED impervious acres draining to ED impervious acres draining to Conserve open space impervious acres draining to Conserve open space suf acres draining to Conserve open space impervious acres draining to Conserve open space impervious acres draining to Conserve open space impervious acres draining to Conserve open space	O's anoff volume reduction 15% named volume industries 15% named volume industries 15% small volume	0.00 0.15 0.15 0.15 0.75 0.75 0.50 0.50 0.50	0.00	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0.000 0.000 0.000 0.000 0.000 0.000	0.00 0.00 0.00 0.00	0.000 0.000 0.000 0.000 0.000 0.000	0.00			10	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00	
Sheetflow to Filter/Ocen Scace Sheetflow to Consension Area with AIB Solis (Space 92) Sheetflow to Consension Area with CID Solis (Space 92) Sheetflow to Consension Area with CID Solis (Space 92) Sheetflow to Viscolated Filter	suf acres draining to ED impervious acres draining to ED impervious acres draining to ED suf acres draining to ED impervious acres draining to ED impervious acres draining to Conserve open space impervious acres draining to Conserve open space suf acres draining to Conserve open space impervious acres draining to Conserve open space impervious acres draining to Conserve open space impervious acres draining to Conserve open space	O's anof volume reduction 15% nund't volume induction 15% nund't volume induction 15% nund't volume induction 15% nund't volume induction 15% nund't volume reduction 15% nund't volume reduction 15% nund't volume induction 15%	0.00 0.15 0.15 0.15 0.75 0.75 0.50 0.50 0.50	0.00	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0		0.000 0.000 0.000 0.000 0.000 0.000	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00			10	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00	
Sheetflow to Filter/Ocen Scace Sheetflow to Consension Area with AIB Solis (Space 92) Sheetflow to Consension Area with CID Solis (Space 92) Sheetflow to Consension Area with CID Solis (Space 92) Sheetflow to Viscolated Filter	suf acres draining to ED impervious acres draining to ED impervious acres draining to ED suf acres draining to ED impervious acres draining to ED impervious acres draining to Conserve open space impervious acres draining to Conserve open space suf acres draining to Conserve open space impervious acres draining to Conserve open space impervious acres draining to Conserve open space impervious acres draining to Conserve open space	Olis anoff volume reduction 15% snelf volume aduction 15% snelf aduction 15% snelf volume aducti	0.00 0.15 0.15 0.15 0.75 0.75 0.50 0.50 0.50	0.00) 0.00) 0.00 K OK.	0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0.000 0.000 0.000 0.000 0.000 0.000	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00			10	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00	
3. Sheetflow to Filter/Doen Stace 9.a. Sheetflow to Conservation Area with A/B Soils (Spac #2) 9.b. Sheetflow to Conservation Area with C/D Soils (Spac #2) 9.c. Sheetflow to Vocatated Filter	turf acres draining to ED impervious acres draining to turn acres draining to turn acres draining to turn acres draining to turn acres draining to turn acres draining to turn acres draining to conserved conserved full acres draining to conserved conserved full acres draining to conserved conserved full acres draining to conserved draining to conserved draining to conserved draining to conserved draining to conserved draining to conserved draining to conserved draining to conserved draining to conserved draining to conserved draining to conserved draining to conserved draining to conserved draining to conserved draining to conserved draining to turn acres turn acres draining to conserved turn acres O'is anoth volume reduction 15% anoth volume red	0.00 0.15 0.15 0.15 0.15 0.75 0.50 0.50 0.50 0.50 ATREATED (accordance) ARRACCHECK SPHICKENIS R. RUNOFF RED.	0.00) 0.00) 0.00 COK. EMOVAL REQUISE RUNOFF REDUCTION PRACTICE	TION IN D.A. A (cf) ES IN D.A. A (lb/vr)	0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0.000 0.000 0.000 0.000 0.000 0.000	0.00 0.00 0.00 0.00	0.000 0.000 0.000 0.000 0.000 0.000	0.00		MTROGEN DI	10	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00		
Sheetflow to Filter/Doen Space Sheetflow to Conservation Area with ARS Soils (Space 92) Sheetflow to Conservation Area with CID Soils (Space 92) Sheetflow to Conservation Area with CID Soils (Space 92)	turf acres draining to ED impervious acres draining to turn acres draining to turn acres draining to turn acres draining to turn acres draining to turn acres draining to turn acres draining to conserved conservation turn acres draining to conserved draining to conserved draining to conserved draining to conserved draining to conserved draining to conserved draining to conserved draining to conserved draining to conserved draining to turn acres turn a	Olis anoff volume reduction 15% snelf volume aduction 15% snelf aduction 15% snelf volume aducti	0.00 0.15 0.15 0.15 0.15 0.75 0.50 0.50 0.50 0.50 ATREATED (accordance) ARRACCHECK SPHICKENIS R. RUNOFF RED.	0.00) 0.00) 0.00 COK. EMOVAL REQUISE RUNOFF REDUCTION PRACTICE	TION IN D.A. A (cf) ES IN D.A. A (lb/vr)	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0.000 0.000 0.000 0.000 0.000 0.000	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00		MITROGEN SU	10	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00	
Sheetflow to Filter/Doen Space Sheetflow to Conservation Area with ARS Soils (Space 92) Sheetflow to Conservation Area with CID Soils (Space 92) Sheetflow to Conservation Area with CID Soils (Space 92)	turf acres draining to ED impervious acres draining to turn acres draining to turn acres draining to turn acres draining to turn acres draining to turn acres draining to turn acres draining to conserved conservation turn acres draining to conserved draining to conserved draining to conserved draining to conserved draining to conserved draining to conserved draining to conserved draining to conserved draining to conserved draining to turn acres turn a	O'is anoth volume reduction 15% anoth volume red	0.00 0.15 0.15 0.15 0.15 0.75 0.50 0.50 0.50 0.50 ATREATED (accordance) ARRACCHECK SPHICKENIS R. RUNOFF RED.	0.00) 0.00) 0.00 COK. EMOVAL REQUISE RUNOFF REDUCTION PRACTICE	TION IN D.A. A (cf) ES IN D.A. A (lb/vr)	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0.000 0.000 0.000 0.000 0.000 0.000	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00		MTROGEN DS	10	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00	
9.a. Sheelflow to Conservation Area with Ab Solet Rose x27. 9.b. Sheelflow to Conservation Area with Ab Solet Rose x27. 9.b. Sheelflow to Conservation Area with Coll Solet Rose x27. 9.b. Sheelflow to Conservation Area with Coll Solet Rose x27. 9.c. Sheeflow to Vogetable Filter Solet Rose x27. N.C.C. Solet Rose x27. N.C.C. Solet Rose x27. N.C.C. Solet Rose x27. N.C.C. Solet Rose x27. N.C.C. Solet Rose x27. N.C.C. Solet Rose x27. N.C.C. Solet Rose x27. N.C.C. Solet Rose x27. N.C.C. Solet Rose x27. N.C.C. Solet Rose x27. N.C.C. Solet Rose x27. N.C.C. Solet Rose x27. N.C.C. Solet Rose x27. N.C.C. Solet Rose x27. N.C.C. Solet Rose x27. N.C.C. Solet Rose x27. N.C.C. Solet Rose x27. N.C.C. Solet Rose x27. N.C.C. Solet Rose x27. N.C. Solet Ro	Lef acres dealing to ED imperious acres dealing to imperious acres dealing to imperious acres dealing to the Acres Aparent to ED. Lef acres Aparent to ED. Left acres Aparent to ED. Left acres Aparent to ED. Left acres Admired to Control acres dealing to Control acres	Olis anoff volame reduction 15% anoff volame modeline 15% anoff volame	0.00 0.15 0.15 0.15 0.75 0.75 0.50 0.50 0.50 0.50 0.50 0.5	0.00) 0.00) 0.00 COK. EMOVAL REQUISE RUNOFF REDUCTION PRACTICE	TION IN D.A. A (cf) ES IN D.A. A (lb/vr)	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0.000 0.000 0.000 0.000 0.000 0.000 0.000	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00		NTROGENE	10	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00	
Scheditor to Consension Area with AS Selection to Consension Area with AS Selection to Consension Area with AS Selection Consension Area with Coll Selection Consension Area with Coll Selection Selectio	Lef acres dealing to ED imperious acres dealing to imperious acres dealing to imperious acres dealing to the Acres Aparent to ED. Lef acres Aparent to ED. Left acres Aparent to ED. Left acres Aparent to ED. Left acres Admired to Control acres dealing to Control acres	Olis anoff volame reduction 15% anoff volame modeline 15% anoff volame	0.00 0.15 0.15 0.15 0.75 0.75 0.50 0.50 0.50 0.50 0.50 0.5	0.00 1 0.00 1 0.00 1 0.00 COK. EMOVAL REQUIRE RUNGER REDUCTION PRACTICS COMPLIANCE CO	TION IN D.A. A (cf). ES IN D.A. A (bh/v) ALCULATIONS	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0.000 0.000	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00		NITROGEN IS	10	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00	
2.4. Sheetflow to Fitter Doon Store 2.4. Sheetflow to Conservation Area with AN Solds (See £7) 2.5. Sheetflow to Conservation Area with CO Solds (See £7) 2.5. Sheetflow to Conservation Area with CO Solds (See £7) 2.5. Sheetflow to Conservation Area with CO Solds (See £7) 4.5. Sheetflow to Conservation Area with CO Solds (See £7) 4.5. Sheetflow to Conservation Area Apply Practices that Rem Apply Practices that Rem	Left acres dealing to ED imperiors acres dealing to ED imperiors acres dealing to the dealing to the control of	Official relation reduction 19th annell volume induction 19th annell reduction 19th annell	0.00 0.15 0.15 0.15 0.75 0.75 0.50 0.50 0.50 0.50 0.50 0.5	0.00 1 0.	ALCULATIONS Runoff from	0.00	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	15 15 0 0 0 0 0	0.000 0.000	0.000 0.000 0.000 0.000 0.000 0.000 0.000	0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00		MITROGEN SI	10 10 10 10 10 0 0 0 0 0 0 0 MMOVAL FROM RI	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00
Sa Sheeffow to Consension Area with Ad Sold Rose 19. Sa Sheeffow to Consension Area with Ad Sold Rose 29. Sheeffow to Consension Area with Ad Sold Rose 29. Sheeffow to Vegatited Filler Early Consension Area with Advanced Filler Early Consension Area with Advanced Filler Early Consension Fil	Lef acres dealing to ED imperious acres dealing to imperious acres dealing to imperious acres dealing to the Acres Aparent to ED. Lef acres Aparent to ED. Left acres Aparent to ED. Left acres Aparent to ED. Left acres Admired to Control acres dealing to Control acres	Official volume reduction 19% named volume induction 19% named induction volume 19% named induction volume 19% named induction volume 19% named induction volume 19% named induction volume 19% named induction volume 19% named induction volume 19% named induction volume 19% named induction volume 19% named induction volume 19% named induction volume 19% named induction volume 19% named induction volume 19% named induction volume 19% named induction volume 19% named induction volume 19% named induction volume 19% named induction volume 19% named volume	0.00 0.15 0.15 0.15 0.75 0.75 0.50 0.50 0.50 0.50 0.50 0.5	0.00 1 0.	TION IN D.A. A (cf). ES IN D.A. A (bh/v) ALCULATIONS	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	15 15 0 0 0 0 0	0.000 0.000	0.000 0.000 0.000 0.000 0.000 0.000 0.000	0.00	0.00 0.00 0.00 0.00 0.00	Downstream Treatment to be Employed	MTROGEN IS	10 10 10 10 10 0 0 0 0 0 0 NBrogen	000 000 000 000 000 000 000 000 000 00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00
9.a. Sheeffow to Consecution Area with 46 field (figer En) 9.a. Sheeffow to Consecution Area with 46 field (figer En) 9.b. Sheeffow is Consecution from 21 b. Sheeffow is Consecution from 67 b. Sheeffow is Vegatated Filler filler. 9.c. Sheeffow is Vegatated Filler filler. 9.	Lef acres dearing to ED Imperious zeres disning to Imperious zeres disning to Information acres disning to Imperious zeres disning to Unit Zeres disning to Unit	Official relation reduction 19th annell' volume induction 19th annell' volume 19th annell' volum	0.00 0.15 0.15 0.15 0.15 0.75 0.50 0.50 0.50 0.50 0.50 0.50 0.5	0.00 1 0.	TION IN D.A. A (cft. S IN D.A. A (cft. S IN D.A. A (thirty). ALCULATIONS Runoff from Upstream RR Practices (cf)	0.00	g g g g g g g g g g g g g g g g g g g	15 15 0 0 0 0 0	Load from	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	Downstream Treatment to be Englayed	NTROGENE	10 10 10 10 10 0 0 0 0 0 0 0 MMOVAL FROM RI	000 000 000 000 000 000 000 000 000 00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00
9.4. Sheetfour to Consensation Area with Ad Sola (See 27) 9.4. Sheetfour to Consensation Area with Ad Sola (See 27) 9.5. Sheetfour Sola (See 27) 9.6. Sheetfour S	Lef acres dealing to ED improvious scree distingty to improvious scree distingty to improvious acres distingty to improvious acres distingty to conserve distingty to conserve distingty to conserve that acres distingty to conserve the acres distingty to conserve the acres distingty to conserve the acres distingty to conserve the acres distingty to conserve the acres distingty to conserve the acres distingty to conserve the acres distingty to conserve the acres distingty to conserve the acres distingty to conserve the acres distingty to conserve the acres distingty to conserve the acres distingty to conserve the acres distingty to conserve the acres distingty to conserve the acres distingty to conserve the acres distingty to th	Official relation reduction 19th annell' volume induction 19th annell' volume 19th annell' volum	0.00 0.15 0.15 0.15 0.75 0.75 0.50 0.50 0.50 0.50 0.50 0.5	000 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 Area (excluding areas treated by upstream or practical prac	Runoff from Upstream RR Practices (cf)	0.00	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	15 15 0 0 0 0 0	Load from	0.000 0.000	Phosphorus Removed By Practice (bs.)	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Downstream Treatment to be Employed	MITROGEN IN	10 10 10 10 10 10 10 10 10 10 10 10 10 1	000 000 000 000 000 000 000 000 000 00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 Rematring Nirogen Load (bs.)
Sa Sheeffow to Consension Area with Ad Sold Rose 19. Sa Sheeffow to Consension Area with Ad Sold Rose 29. Sheeffow to Consension Area with Ad Sold Rose 29. Sheeffow to Vegatited Filler Early Consension Area with Advanced Filler Early Consension Area with Advanced Filler Early Consension Fil	Left acres deserge to ED Impervious acres deserge to Impervious acres deserge to Impervious acres deserge to Impervious acres desiring to Impervious acres desiring to Impervious acres desiring to Impervious acres desiring to Impervious acres desiring Impe	Olis anolf volume reduction 19% anolf volume modeline 19% anolf modeline 19% anolf modeline 19% anolf modeline 19% anolf modeline 19% anolf modeline 10% anol	0.00 0.15 0.15 0.15 0.15 0.75 0.50 0.50 0.50 0.50 0.50 0.50 0.5	000 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	Runoff from Upstream RR Practices (cf)	0.00	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	15 15 0 0 0 0 0 0 0 Phosphorus efficiency (N)	Load from Upstream RR Practices (lbs)	0.000 0.000	Phosphorus Removed By Practice (bs.)	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Downstream Treatment to be Engloyed	WITHOUGH IS	10 10 10 10 10 0 0 0 0 0 0 NBrogen	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 Remaining Nitrogen Load (bs.)
Da. Sheelfow to Consension Area with All Solds (See Ea) 2a. Sheelfow to Consension Area with All Solds (See Ea) 2b. Sheelfow to Consension Area and Color (See Ea) 2b. Sheelfow to Vegetated Files and Color (See Ea) 2c. Sheelfow to Vegetated Files 2c. Sheelfow	Lef acres desiring to ED Impervious acres desiring to Impervious acres desiring to And acres apparent to ED And acres apparent to ED Impervious acres desiring to conserve Indiana acres desiring to conserve Indiana acres desiring to conserve Indiana acres desiring to conserve Indiana acres desiring to conserve Indiana acres desiring to conserve Indiana acres desiring to conserve Indiana acres desiring to conserve Indiana acres desiring to conserve United Impervious acres desiring to est seet	Olis anosti voluma reduction 1991 unatti voluma medication 1992 unatti voluma medication 1993 unatti voluma medication 1993 unatti voluma medication 1993 unatti voluma medication for treated and 1993 unatti	0.00 0.15 0.15 0.15 0.15 0.75 0.50 0.50 0.50 0.50 0.50 0.50 0.5	000 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 Area (excluding areas treated by upstream or practical prac	Runoff from Upstream RR Practices (cf)	0.00	Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q	15 15 15 15 15 15 15 15 15 15 15 15 15 1	Load from Upstream RR Practices (bs)	0.000 0.000	Phosphorus Removed By Practice (bs.)	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Downstream Treatment to be Employed	MTSOGEN IS	10 10 10 10 10 10 10 10 10 10 10 10 10 1	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 Rematring Nirogen Load (bs.)
9.a. Sheetfow to Consensation Area with All Solds (Since F2) 9.b. Sheetfow to Consensation Area with All Solds (Since F2) 9.b. Sheetfow to Consensation Area with CO Solds (Since F2) 9.c. Sheetfow to Vegetated Filter with All Solds (Since F2) 9.c. Sheetfow to Vegetated Filter in A Sold of Company Amended F2 of Since F	Left acres deserge to ED Impervious acres deserge to Impervious acres deserge to Impervious acres deserge to Impervious acres desiring to Impervious acres desiring to Impervious acres desiring to Impervious acres desiring to Impervious acres desiring Impe	Olis anosti voluma reduction 1991 unatti voluma medication 1992 unatti voluma medication 1993 unatti voluma medication 1993 unatti voluma medication 1993 unatti voluma medication for treated and 1993 unatti	0.00 0.15 0.15 0.15 0.15 0.75 0.50 0.50 0.50 0.50 0.50 0.50 0.5	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 Area (excluding areas treated by upstream (areaded) area (ar	Runoff from Upstream RR Practices (cf) 0.00 0.00	0.00	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	15 15 15 15 15 15 15 15 15 15 15 15 15 1	Load from Upstream RR Practices (lbs)	0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	Phosphorus Removed By Practice (bs.)	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Downstrain Trialment to be Employed	MITROGEN BS	19 19 19 19 19 19 19 19 19 19 19 19 19 1	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 Remaining Nitrogen Load (bs.)
9.a. Sheeffow to Consension Area with 46 Sels (See Fig. 9.a. Sheeffow to Consension Area with 46 Sels (See Fig. 9.a. Sheeffow Sels Consension Area with CO Sels (See Fig. 9.a. Sheeffow to Vegetated Filter and Sels (See Filter Sels Sels Sels Sels Sels Sels Sels Sels	Left acres dealing to ED Importious acres distingt to India acres distingt to India acres distingt to India acres distingt to India acres distingt to conserve Importious acres distingt to conserve Open Speet Importious acres distingt to conserve Importious acres distingt to conserve Importious acres distingt to conserve Open Speet Importious acres distingt to Unit Importious acres distingt to the stress Importious acres	Offis smooff volume reduction 1975 supply volume induction 1976 supply volume induction 1976 supply volume induction 1976 supply volume induction 1976 supply volume induction 1976 supply volume induction 1976 supply volume induction 1976 supply volume induction 1976 supply volume 1976 supply volum	0.00 0.15 0.15 0.15 0.15 0.75 0.50 0.50 0.50 0.50 0.50 0.50 0.5	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 Area (excluding areas treated by upstream (areaded) area (ar	Runoff from Upstream RR Practices (cf) 0.00 0.00	0.00	g o o o o o o o o o o o o o o o o o o o	15 15 15 15 15 15 15 15 15 15 15 15 15 1	Load from Upstream RR Practices (lbs)	0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	Phosphorus Removed By Practice (bs.)	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Downstream Treatment to be Employed	MITGOGS 5s	19 19 19 19 19 19 19 19 19 19 19 19 19 1	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 Remaining Nitrogen Load (bs.)
2. Sheetflow to State Town State 2. Sheetflow to Conservation Area with Not Sold (See 27) 2. Sheetflow to Conservation Area with Old Sold (See 27) 2. Sheetflow to Vegetated Filar Sold (See 27) 2. Sheetflow to Vegetated Filar Sold (See 27) 2. Sheetflow to Vegetated Filar Sold (See 27) 3. Sheetflow to Vegetated Filar Sold (See 27) 3. Sheetflow to Vegetated Filar Sold (See 27) 3. Sheetflow to Vegetated Filar Apply Practices that Rem Practice 1. Well Sweld (See 21) 10. Well Sweld (See 21) 11. Filardren Practices	Lef acres dealing to ED imperious acres dealing to an imperious acres dealing to the acres dealing to the acres dealing to imperious acres dealing to imperious acres dealing to consessed once to the acres dealing to consessed once the acres dealing to the properties a	Offis smooff volume reduction 1975 supply volume induction 1976 supply volume induction 1976 supply volume induction 1976 supply volume induction 1976 supply volume induction 1976 supply volume induction 1976 supply volume induction 1976 supply volume induction 1976 supply volume 1976 supply volum	0.00 0.15 0.15 0.15 0.15 0.75 0.50 0.50 0.50 0.50 0.50 0.50 0.5	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 Area (excluding areas treated by upstream (areaded) area (ar	IS NO A. A CAPE SO NO A. A CAPE ALCULATIONS Runoff from Uppream RR Practices (0) 0.00 0.00	0.00	S. O.	15 15 15 15 15 15 15 15 15 15 15 15 15 1	Load from Upstream RR Practices (lbs)	0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	Phosphorus Removed By Practice (bs.)	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Constitute Treatment to be England	WITHOUGH SI	10 10 10 10 10 10 10 10 10 10 10 10 10 1	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 Remaining Nitrogen Load (bs.)
9.a. Sheeffow to Consension Area with 65 Sels (See Fig. 1). 9.b. Sheeffow to Consension Area with 65 Sels (See Fig. 1). 9.b. Sheeffow to Consension Area with College Fig. 1). 9.c. Sheeffow to Vogestion Filter and College Filter (See Filter). 9.c. Sheeffow to Vogestion Filter with College Filter (See Filter). 9.c. Sheeffow to Vogestion Filter (See Filter). 9.c. Sheeffow to Vogestion Filter (See Filter). 9.c. Sheeffow to Vogestion Filter (See Filter). 9.c. Sheeffow to Vogestion Filter). 9.c. Sheeffow to Vogestion Filter (See Filtr). 10.a. Wed Sheefe #1 (Seec #11).	Left acres dealing to ED Improvious acres dealing to Consensed dealing to	Offis smooff volume reduction 1975 supply volume induction 1976 supply volume induction 1976 supply volume induction 1976 supply volume induction 1976 supply volume induction 1976 supply volume induction 1976 supply volume induction 1976 supply volume induction 1976 supply volume 1976 supply volum	0.00 0.15 0.15 0.15 0.15 0.75 0.50 0.50 0.50 0.50 0.50 0.50 0.5	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 Area (excluding areas treated by upstream (areaded) area (ar	IN A ALCULATIONS Runoff from Upstream R Practices (cf) 0.00 0.00 0.00 0.00	0.00	Semaining Semain	15 15 15 15 15 15 15 15 15 15 15 15 15 1	Load from Upstream RR Practices (lbs)	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Phosphorus Removed By Practice (bs.)	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Downstream Treatment to be Employed	MTROGEN B	19 19 19 19 19 19 19 19 19 19 19 19 19 1	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0
Subsettion to Consensation Area with 65 Sels (See 22) Subsettion to Consensation Area with 65 Sels (See 22) Subsettion to Consensation Area with 65 Sels (See 22) Subsettion to Consensation Area with College 22 Subsettion to Consensation Area with College 22 Subsettion Sels (See 22) Apply Practices that Rem Practice 10 Wet Swale (Consest Plant) 10 a. Wet Swale (Consest Plant) 10 b. Wet Swale (Consest Plant) 11 a. Filleton Practices 51 (Seec 511) 11 Filleton Practices 51.	Let acres dealing to ED Impervious acres distingt to Impervious acres distingt to India acres distingt to India acres distingt to Impervious acres distingt to test seet Impervious acres distingt to Impervious acres dist	Offis smooff volume reduction 1975 supply volume induction 1976 supply volume induction 1976 supply volume induction 1976 supply volume induction 1976 supply volume induction 1976 supply volume induction 1976 supply volume induction 1976 supply volume induction 1976 supply volume 1976 supply volum	0.00 0.15 0.15 0.15 0.15 0.75 0.50 0.50 0.50 0.50 0.50 0.50 0.5	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 Area (excluding areas treated by upstream (areaded) area (ar	IRAN BLA A LOTIONS RUNOT From Upparters RR Practices (cf) 0.00 0.00 0.00 0.00	0.00	Remaining Volume (d)	15 15 15 15 15 15 15 15 15 15 15 15 15 1	Load from Upstream RR Practices (lbs)	0.000 0.000	Phosphorus Removed By Practice (bs.)	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Downstream Treatment to be Employed	MTROGEN BS	10 10 10 10 10 10 10 10 10 10 10 10 10 1	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 Remaining Nitrogen Load (bs.)
9.4. Sheetflow to Consension Area with A5 Sold (See 27) 9.4. Sheetflow to Consension Area with A5 Sold (See 27) 9.5. Sheetflow to Connection Area with C0 Sold (See 27) 9.6. Sheetflow to Vegetated Filter with C0 Sold (See 27) 9.6. Sheetflow to Vegetated Filter (See 27) 9.6. Sheetflow to Vegetated Filter (See 27) 9.6. Sheetflow to Vegetated Filter (See 27) 9.6. Sheetflow to Vegetated Filter (See 27) 9.6. Sheetflow to Vegetated Filter (See 27) 9.6. Sheetflow to Vegetated Filter (See 27) 10.6. Wed Swele St (See 21) 11. Filterton Frectors	Let acres desirely to LED Let acres desirely to LED Let acres desirely to LED Let acres desirely to LED Let acres desirely to LED Let acres desirely to LED Let acres desirely to LED Let acres desirely to LED Let acres desirely to LED Let acres desirely to LED Let acres desirely to LED Let acres desirely to LED LET LET LET LET LET LET LET	Offis accelf violante reduction 1975 accelf violante induction 1975 accelf violante 1975 ac	0.00 0.15 0.15 0.15 0.15 0.75 0.50 0.50 0.50 0.50 0.50 0.50 0.5	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 Area (excluding areas treated by upstream (areaded) area (ar	IN A ALCULATIONS Runoff from Upstream R Practices (cf) 0.00 0.00 0.00 0.00	0.00	Benediting	15 15 15 15 15 15 15 15 15 15 15 15 15 1	Load from Upstream RR Practices (lbs)	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Phosphorus Removed By Practice (bs.)	0.000 0.000	Downstream Treatment to be Employed	NTROGEN R	19 19 19 19 19 19 19 19 19 19 19 19 19 1	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0
9.a. Sheeffow to Consension Area with 46 Sels (See Fig. 9.a. Sheeffow to Consension Area with 46 Sels (See Fig. 9.a. Sheeffow to Consension Area with CO Sels (See Fig. 9.a. Sheeffow to Vegetated Filter and Sels (See Fig. 9.a. Sheeffow to Vegetated Filter (Sels (See Fig. 9.a. Sels (See	Let acres dealing to ED Impervious acres distingt to Impervious acres distingt to India acres distingt to India acres distingt to Impervious acres distingt to test seet Impervious acres distingt to Impervious acres dist	O'ls anotif values reduction 19% noted Values and dollar 19% noted Values middled 19% noted Values middled 19% noted Values middled 19% noted Values middled 19% noted Values middled 19% noted Values middled 19% noted and 19% n	0.00 0.15 0.15 0.15 0.15 0.75 0.50 0.50 0.50 0.50 0.50 0.50 0.5	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 Area (excluding areas treated by upstream (areaded) area (ar	IRAN BLA A LOTIONS RUNOT From Upparters RR Practices (cf) 0.00 0.00 0.00 0.00	0.00	Remailing Part of the Control of the	15 15 15 15 15 15 15 15 15 15 15 15 15 1	Load from Upstream RR Practices (lbs)	0.000 0.000	Phosphorus Removed By Practice (bs.)	0.000 0.000	Commitment Teatment to be England	WITHOUGH IS	10 10 10 10 10 10 10 10 10 10 10 10 10 1	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0

			_																	
2.a.Constructed Wetland #1 (Spec #13						0.00	0.00			60	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
2 a Constructed Welland #1 (Spec #13	impervious ac					0.00	0.00	- 0	- 0	- 50	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
	wet					0.00	0.00	0	0	75	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
2.b. Constructed Wetland #2 (Spec #1)	turf acres drais	ning to wetland				0.00	0.00	0	0	75	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
13. Wet Ponds																13. Wet Ponds				
	impervious ac	res draining to oond				0.00	0.00	0		50	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
						0.00	0.00	-	-		0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
13.a. Wet Pond #1 (Spec #14)	turf acres drain	ing to wet pond				0.00	0.00	0	0	50	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
	impervious ac																			
	wet	oond	-			0.00	0.00	0	0	45	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
13.b. Wet Pond #1 (Coastal Plain) (Spec #14)	turf acres drain	ing to wet good				0.00	0.00	0	0	45	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
	impervious ac																			
	wet	oond				0.00	0.00	0	0	75	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
13.c. Wet Pond #2 (Spec #14)	turf acres drain					0.00	0.00			75	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
13.C. Wet Polid #2 (Spec #14)	impervious ac					0.00	0.00	- 0	- 0	/5	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
	wet	pond				0.00	0.00	0	0	65	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
13.d. Wet Pond #2 (Coastal Plain)																				
(Spec #14)	turf acres drain	ing to wet pond				0.00	0.00	0	0	65	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
14. Manufactured BMP																14. Manufacture	BMP			
	impervious ac					0.00	0.00				0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
		1000									0.00	0.00	0.00	0.00			0.00			0.00
14. Insert Name of Device	turf acres drai	ning to device				0.00	0.00	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
		-	OTAL BEDE	RVIOUS COVER	TREATER (ne)	0.00														
				AL TURF AREA		0.00														
					AREA CHECK															
			 		ANEA CHECK	UK.									1				—	
	PH	OSPHORUS R	EMOVAL BY				OLUME IN D.A. A													
			-		TOTAL PHOSP	PHORUS REMOVA	L IN D.A. A (Ib/vr)	0.00							-					
	SEE W	ATER QUAL	ITY COMP	LIANCE TAB	FOR SITE CO	MPLIANCE CA	ALCULATIONS													
		NITROGEN R	EMOVAL BY	PRACTICES TH	AT DO NOT RE	DUCE RUNOFF V	OLUME IN D.A. A	0.00							-					
		MI KOGEN K	LECYAL BI	I NACI NES IP	TOTAL NIT	ROGEN REMOVA	I IN D.A. A (Ib/w)	0.00												

Codit Areas Volume from Co	varogen coad from pastream t RR I Practices I	Untreated Nitrogen Load to Practice (fbs.)	Nkrogen Removed By Practice (lbs.)	
100 100	errogen oad from pasteam RR 1 Practices 1	Unfreated Nirrogen Load to Practice (lbs.)	Nikrogen Removed By Practice (lbs.)	
Special Conference 100 1	varogen .oad from Jpstream !R ! ?ractices !	Untreated Nitrogen Load to Practice (lbs.)	Nkrogen Removed By Practice (lbs.)	
Total	varogen .oad from Jpstream 18R I Practices	Untreated Nitrogen Load to Practice (lbs.)	Nitrogen Removed By Practice (lbs.)	
Codd	Jestices 1	Untreated Nitrogen Load to Practice (lbs.)	Nitrogen Removed By Practice (lbs.)	
Cold Cold	Upstream RR Practices	Untreated Nitrogen Load to Practice (lbs.)	Nitrogen Removed By Practice (lbs.)	
A Virginational Root #1 (Flore #5) across of researce on 40% secret 40% sec	0.00	T I I I I I I I I I I I I I I I I I I I		Remaining Nitrogen Load (lbs.)
1. Vegetimed Boof \$2 (files 65)	0.00			COMO NOS.
Comparison Com	0.00	0.00	0.00	0.00
2.8 Simple Disconnection to AB Disconnection to AB Disconnection to AB Disconnection to AB Disconnection to CD Disconnection t		0.00	0.00	0.00
2.5. Simple Disconnection to DC 20% runtil volume instanction in CP 20% runtil volume instanction in CP 20% runtil volume instanction in CP 20% runtil volume instanction in CP 20% runtil volume instanction in CP 20% runtil volume in Annual Parameter in CP 20% runtil volume in Annual Parameter in CP 20% runtil volume in Annual Parameter in CP 20% runtil volume in Annual Parameter in CP 20% runtil volume in Annual Parameter in CP 20% runtil volume in Annual Parameter in CP 20% runtil volume in Annual Parameter in CP 20% runtil volume in Annual Parameter in CP 20% runtil volume in Annual Parameter in CP 20% runtil volume in Annual Parameter in CP 20% runtil volume in Annual Parameter in CP 20% runtil volume in Annual Parameter in CP 20% runtil volume in Runtil runt	ace Disconne	ection		
26. R. Floor of the Control of the C	0.00	0.00	0.00	0.00
2006 M2 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	0.00	0.00	0.00	0.00
2a To Dry Well or Freen Dame 2 Dame 1 State Control Dame 2 Dame 1 State Control Dame 2 Dame 1 State Control Dame 2 State Control Dame 2	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00
2 to 1 Real Cardinate 20 Micro- Microscopic (2) Gines (2) Microscopic (2) Micr	0.00	0.00	0.00	0.00
2.h. To Rainwater Harvesting (Spoc. Soc. 58). 45/10/10/10/10/10/10/10/10/10/10/10/10/10/	0.00	0.00	0.00	0.00
2. To Stormatin Plant (Utdan 201, And Visualina in Reduction 2	0.00	0.00	0.00	0.00
2. Permittle Presents 3. Permittle Presents	ment			
3.a. Permasible Pavennert #1 (Spic FF) acres of "searce" (programmer #) acres of premise previous previous previous (programmer #) 45% sent't cleane reduction 0.45% sent't cleane reduction 0.45 0.00 0 0 0 25 0.00 0.00 0.00 0.00 0.00	0.00	0.00	0.00	0.00
3b. Permeable Prevenent #2 (Spic #7) axis of compatible parameter, 75% surefl volume reduction 0.75 0.00 0 0 0 25 0.00 0.00 0.00 0.00	0.00	0.00	0.00	0.00
4. Grass Channel Impervious across dispining to University of Control Office (Control Office (
4.a. Grass Channel AB Solid Spec Special Special Speci	0.00	0.00	0.00	0.00
Charmels 20% runoff volume reduction 0.20 0.00 0 0 0 15 0.00 0.00 0.00 0.00 0.00	0.00	0.00	0.00	0.00
Ch. Grass Charrel CID Sols (Spec P) Grass dharmes	0.00	0.00	0.00	0.00
4. C Grace Charried Composition Improvious across damainty to	0.00	0.00	0.00	0.00
Spec. 49 half zone distinging togothe fragment 27% month guidens and class 5,20 8,00 8 8 9 15 8,00 5,00 5,00 5,00 5,00 5,00 5,00 5,0	0.00	0.00	0.00	0.00
1. Dry Sank				
S.a. Dry Sheek Pf (Spec Pf) (Spec Pf	0.00	0.00	0.00	0.00
and areas distances to the variety of the control o	0.00	0.00	0.00	0.00
5.b. Dry Sweet e2 (Spor #10) smalle 60% needs volume reduction 0.60 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00	0.00	0.00	0.00
tud acres districts but visible 50% sized lydume reduction	0.00	0.00	0.00	0.00
8 Discretion of a Ulban (September 1 of Ulba	0.00	0.00	0.00	0.00
Bioxentrion (Spic III) Mrf area disting to bioxentrion (Spic III) and area distinguished (Spic III) and area distinguished (Spic I	0.00	0.00	0.00	0.00
6.3. Biordentino (2 (Spc 19)	0.00	0.00	0.00	0.00
tuff acriss distring to biorectricing and acrising to biorectricing and acrising acr	0.00	0.00	0.00	0.00
7. Inflication Typer/loss acres dishing to Typer/loss acres dishing to Typer/loss acres dishing to Typer/loss acres dishing to Typer/loss acres dishing to Typer/loss acres dishing to Typer/loss acres dishing to Typer/loss				
7.a. Infiltration #1 (Spic #8) Infiltration 50% nureff volume reduction 6.50 0.00 0 0 0 2 0.00 0.00 0.00 0.00 15	0.00	0.00	0.00	0.00
1.7a. Infiliation P2 (Signe 88) 1 Infiliation P2 (Signe 88) 30% nurefl volume reduction 0.50 0.00 0 0 2.55 0.00 0.00 0.00 0.00 1.55 7.b. Infiliation P2 (Signe 88) 1 Infiliation 2.00 0.00 0.00 0.00 0.00 0.00 0.00 1.55	0.00	0.00	0.00	0.00
7.b. Uffinized (2 (Spec 8)) and along distribute infiliation (20% specify instance specified in the control of	0.00	0.00	0.00	0.00
E. Estraded Deterior Pord	ition Pond			
B a ED R1 (Spc 115) ED 01 a seed solven solved size of Spc 115 and 00 00 00 00 00 00 00 00 00 00 00 00 00	0.00	0.00	0.00	0.00
telf across draining to ED U/N surefit volume reduction 0.00 0.00 0 0 0 15 0.00 0.00 0.00 0.00	0.00	0.00	0.00	0.00
Impervious across distinct to ED to 15% narrell volume reduction 0.15 0.00 0 0 0 15 0.00 0.00 0.00 10	0.00	0.00	0.00	0.00
Mr acros describ ED 155 conflighers solution 0.15 900 0 0 0 15 0.00 0.00 0.00 0.00	0.00	0.00	0.00	0.00
impervious acres draining to 75% runoff volume reduction	nservation An	rea or Filter Strip		
Sheefflow to Conservation Alexa Sheefflow to Conservation Alexa American Sheefflow to Conservation Alexa	0.00	0.00	0.00	0.00
Impervious across disting to 10% acrost formation across disting to 10% acrost formation across disting to 10% acrost formation across distingtion (20% acrost formation across 10.50 0.00 0 0 0 0 0 0.00 0.00 0.00 0.0	0.00	0.00	0.00	0.00
9.b. Sheatflewis Conservation Area 1 lart acres distings to conserved 57% xnorff industrion vitume with CTD Solis (Spec 17)	0.00	0.00	0.00	0.00
2.c. Section to Yugotated Filter Concentration Section Sec	0.00	0.00	0.00	0.00
ECC Solis Siere IV A 841 conn reason for tragent areas 0.50 8.00 0 0 0 0 0 000 000 000	0.00	0.00	0.00	0.00
TOTAL METRICOLOGY TRATED IND. 000 TOTAL TURN PRESTATED IND. 000 TOTAL TURN PRESTATED IND. 000 TOTAL TURN PRESTATED IND. 000	==			
AMEA CHECK DOS.				
TOTAL PHOSPHOROUS REMOVAL REQUIRED ON SITE INVAL TOTA RUMBER REDUCTION NO. A. BINT PHOSPHORUS REMOVAL FROM DUMBER REDUCTION NO. A. BINT PHOSPHORUS REMOVAL FROM DUMBER REDUCTION NO. A. BINT O O O O O O O O O O O O O				
PHOSPHORUS REMOVAL FROM RUNOFF REDUCTION PRACTICES IN DA. 8 INSVI. 0.00 INTROGEN REMOVAL FROM RUNO SEE WATER QUALITY COMPLIANCE TAB FOR SITE COMPLIANCE CALCULATIONS NITROGEN REMOVAL FROM RUNO SEE WATER QUALITY COMPLIANCE TAB FOR SITE COMPLIANCE CALCULATIONS	NOFF REDUC	UNOFF REDUCTION PRACTICES	S IN D.A. B (lb/vr)	0.00
	\longrightarrow			
Apply Practices that Remove Pollutants but Do Not Reduce Runoff Volume	etrogen			
areas treated by Rouff from Romaining Load from Phosphorus Phosphorus Romaining Ustram Usstram R Rundf Rundf Phosphorus Ustram R Load for Phosphorus New Nitroen R River Rundf Phosphorus Ustram R Load for Phosphorus	Load from Upstream I	Untreated Nitrogen Load to Practice (lbs.)	Nitrogen Removed By	Remaining Nitrogen
Practice Unit Description of Credit practices (r) Reduction (rf) Volume (rf) Efficiency (%) Practices (bs) (lbs.) Practice (lbs.) Load (lbs.) Downstream Treatment to be Employed Efficiency (%) Practice (lbs.) (lbs.) Practice (lbs.) Load (lbs.) Downstream Treatment to be Employed Efficiency (%) Practice (lbs.) (lbs.) Practice (lbs.) (lbs.) Downstream Treatment to be Employed Efficiency (%) Practice (lbs.) (lbs.) Practice (lbs.) (lbs.) Downstream Treatment to be Employed Efficiency (%) Practice (lbs.) (lbs.) Practice (lbs.) (lbs.) Downstream Treatment to be Employed Efficiency (%) Practice (lbs.) (lbs.) Practice (lbs.) (lbs.) Downstream Treatment to be Employed Efficiency (%) Practice (lbs.) (lbs.) Practice (lbs.) (lbs.) Downstream Treatment to be Employed Efficiency (%) Practice (lbs.) (lbs.) Practice (lbs.) (lbs.) Downstream Treatment to be Employed Efficiency (%) Practice (lbs.) (lbs.		Practice (lbs.)	Practice (lbs.)	Load (lbs.)
Imperiodic around disting to 100 000 000 0 0 20 000 000 000 000 000	0.00	0.00	0.00	0.00
10.a. Well Steake #1 (Spec #11) but a cross dealing to west swale 9 000 0.00 0.00 0.00 0.00 0.00 0.00 0.	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	
Impervious arcse distring to word swale 0.000 0.	0.00	0.00	0.00	0.00
(moenious acres draining to				
Imperioda acres delering to 1,00	ces			0.00
Imperiods acred delining to 0.00	0.00	0.00	0.00	
Imperioda acres delering to 1,00	0.00 0.00	0.00	0.00	0.00
Imperiods after delivery	0.00 0.00 0.00		0.00	
Improvious according to 1.00 1.00 0.		0.00		

2.a.Constructed Wetland #1 (Spec #13						0.00	0.00		_	60	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
Zacorsocial Waterior (Space)	impervious ac					0.00	0.00			- 20	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
	wet					0.00	0.00	0	0	75	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
2.b. Constructed Wetland #2 (Spec #1)	turf acres drain	ing to wetland		_		0.00	0.00	0	0	75	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
13. Wet Ponds																13. Wet Ponds				
	impervious ac	res draining to				0.00	0.00			50	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
	wet	ociu				0.00	0.00	- 0		50	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
13.a. Wet Pond #1 (Spec #14)	turf acres drain	ng to wet pond				0.00	0.00	0	0	50	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
	impervious ac																			
	wet	ond				0.00	0.00	0	0	45	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
13.b. Wet Pond #1 (Coastal Plain) (Spec #14)	turf acres drain	no to unt nood				0.00	0.00	0		45	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
	impervious ac																			
	wet					0.00	0.00	0	0	75	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
13.c. Wet Pond #2 (Spec #14)						0.00	0.00		_	75	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
13.c. Wet Polici #2 (opec #14)	turf acres drain impervious ac					0.00	0.00	- 0		/5	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
	wet	ond				0.00	0.00	0	0	65	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
13.d. Wet Pond #2 (Coastal Plain)																				
(Spec #14)	turf acres drain	ng to wet pond				0.00	0.00	0	0	65	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
14. Manufactured BMP																14. Manufacture	BMP			
	impervious ac					0.00	0.00	0			0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
		104									5,500	0.00	0.00				0.00			0.00
14. Insert Name of Device	turf acres drai	ning to device				0.00	0.00	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
			OTAL BEDE	RVIOUS COVER	TREATER (ne)	0.00														
				AL TURF AREA		0.00														
					AREA CHECK															
					ANEA CHECK	UK.			 						1				—	
	PH	OSPHORUS R	EMOVAL BY			DUCE RUNOFF V		0.00												
					TOTAL PHOSP	PHORUS REMOVA	L IN D.A. B (lb/vr)	0.00	-	-	1				-					
	SEE W	ATER QUAL	TY COMP	LIANCE TAB	FOR SITE CO	MPLIANCE CA	LCULATIONS													
		NITROGEN R	EMOVAL BY	PRACTICES TH	AT DO NOT RE	DUCE RUNOFF V	OLUME IN D.A.B.	0.00											+	
		- Contract of the contract of				ROGEN REMOVA														

Drainage Area C																			
Drainage Area C Land Cover (acres	s) A soils B Soils C	Soils D Soils	Totals	Land Cover Rv															
Forest/Open Space (acres) undisturbed, protected forest/open space or reforested land	0.00 0.00	0.00 0.00	0.00	0.00															
scace or reforested land Managed Turf (acres) – disturbed, graded for yards or other turf to be mowed/managed	0.00 0.00	0.00 0.00	0.00	0.00															
Impervious Cover (acres)	0.00 0.00	0.00 0.00 Total	0.00	0.00		Post Develo	oment Treatme	nt Volume (cf)	0										
Apply Runoff Reduction F	Practices to Reduce Trea	tment Volume & Po	st-Develop	ment Load in	Drainage An	a C			Phosphorus	Untreated						Narogen Load from			
Credit	Unit	Description of Credit	Credit	Credit Area	Volume from Upstream RR Practice (cf)	Runoff Reduction (cf)	Remaining Runoff Volume (cf)	Phosphorus	Load from Upstream RR Practices (fbs)	Phosphorus	Phosphorus Removed By Practice (lbs.)	Remaining Phosphorus Load (lbs.)	Downstream Treatment to be Employed		Nitrogen Efficiency (%)	Upstream	Untreated Nitrogen Load to Practice (lbs.)	Nitrogen Removed By Practice (lhs.)	Remaining Nitrogen Load (lbs.)
1. Vegetated Roof															1. Green Roof				
1.a. Vegetated Roof #1 (Spec #5)		5% runoff volume reduction.	0.45	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00
1.b. Vegetated Roof #2 (Spec #5)	acres of green roof 8	0% runoff volume reduction	0.60	0.00	0	0	0	٥	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00
Rooftop Disconnection Simple Disconnection to A/B Soils (Spec #1)	impervious acres disconnected	i0% runoff volume reduction for treated area	0.50	000	0	0	0	0	0.00	0.00	0.00	0.00			2. Impervious S	urface Disconno	ection 0.00	0.00	0.00
2.b. Simple Disconnection to C/D Soils (Spec #1)	impervious acres disconnected	5% runoff volume reduction for treated area	0.25	0.00	0	0	0		0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00
 To Soil Amended Filter Path as per specifications (existing C/D soils) (Spec #4) 	impervious acres disconnected	0% runoff volume reduction for treated area	0.50	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00
2.d. To Dry Well or French Drain #1 (Microinfilitation #1) (Spec #8) 2.e. To Dry Well or French Drain #2	impervious acres disconnected	6% runoff volume reduction for treated area 6% runoff volume reduction	0.50	0.00	0	0	0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00
(Micro-Infiltration #2) (Spec #8) 2.f. To Rain Garden #1 (Micro-	impervious acres disconnected	for treated area	0.90	0.00	0	0	0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00
Bioretention #1) (Spec #9) 2.g. To Rain Garden #2 (Micro- Bioretention #2) (Spec #9)		40% of volume captured 10% runoff volume reduction for treated area	0.40	0.00	0	0	0	25 50	0.00	0.00	0.00	0.00			60	0.00	0.00	0.00	0.00
2.h. To Rainwater Harvesting (Spec	impervious acres captured	based on tank size and design spreadsheet (See Spec #6)	0.00	000	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00
2.J. To Stormwater Planter (Urban Bioretention) (Spec #9. Appendix A)	impervious acres disconnected 4	10% runoff volume reduction for treated area	0.40	0.00	0	0	0	25	0.00	0.00	0.00	0.00			40	0.00	0.00	0.00	0.00
3. Permeable Pavement															3. Permeable Pa	vement			
3.a. Permeable Pavement #1 (Spec #	impervious pavement 4	5% runoff volume reduction	0.45	0.00	0	0	0	25	0.00	0.00	0.00	0.00			25	0.00	0.00	0.00	0.00
3.b. Permeable Pavement #2 (Spec #	17	5% runoff volume reduction	0.75	0.00	0	0	0	25	0.00	0.00	0.00	0.00			25	0.00	0.00	0.00	0.00
4. Grass Channel	impervious acres draining to														4. Grass Chann	N .			
4.a. Grass Channel A/B Soils (Spec #3)	grass channels 2 turf acres draining to grass	20% runoff volume reduction	0.20	0.00	0	0	0	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00
4.b. Grass Channel C/D Soils (Spec #	channels 2 impervious acres draining to	20% runoff volume reduction	0.20	0.00	0	0	0	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00
	turf acres draining to grass channels 1	10% runoff volume reduction	0.10	0.00	0	0	0	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00
4.c. Grass Channel Compost Amended Soils as per specs (see Spec #4)	impervious acres draining to grass channels 3 turf acres draining to grass	80% runoff volume reduction	0.20	0.00	0	0	0	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00
400	channels 3	80% runoff volume reduction	0.20	0.00	0	0	0	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00
5. Drv Swale	impervious acres draining to dry														5. Dry Swale		0.00		
5.a. Dry Swale #1 (Spec #10)	turf acres draining to dry swale 4	10% runoff volume reduction 10% runoff volume reduction	0.40	0.00	0	0	0	20	0.00	0.00	0.00	0.00			25	0.00	0.00	0.00	0.00
5.b. Dry Swale #2 (Spec #10)	impervious acres draining to dry swale 6	50% runoff volume reduction	0.60	0.00	0	0	0	40	0.00	0.00	0.00	0.00			35	0.00	0.00	0.00	0.00
	turf acres draining to dry swale 6	50% runoff volume reduction	0.60	0.00	0	0	0	40	0.00	0.00	0.00	0.00			35	0.00	0.00	0.00	0.00
6. Bioretention	impervious acres draining to														6. Bioretention				
6.a. Bioretention #1 or Urban Bioretention (Spec #9)	bioretention 4 turf acres draining to bioretention 4	10% runoff volume reduction 10% runoff volume reduction	0.40	0.00	0	0	0	25	0.00	0.00	0.00	0.00			40	0.00	0.00	0.00	0.00
6.b. Bioretention #2 (Spec #9)	impervious acres draining to bioretention 8	80% runoff volume reduction	0.80	0.00	0	0	0	50	0.00	0.00	0.00	0.00			60	0.00	0.00	0.00	0.00
	turf acres draining to bioretention 8	80% runoff volume reduction	0.80	0.00	0	0	0	50	0.00	0.00	0.00	0.00			60	0.00	0.00	0.00	0.00
7. Infiltration	impervious acres draining to														7. Infiltration				
7.a. Infiltration #1 (Spec #8)	infiltration 5	50% runoff volume reduction	0.50	0.00	0	0	0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00
7.b. Infiltration #2 (Spec #8)	impervious acres draining to	50% runoff volume reduction	0.50	0.00	0	0	0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00
		10% runoff volume reduction	0.90	0.00	0	0	0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00
8. Extended Detention Pond	impervious acres draining to														8. Extended De	ention Pond			
8.a. ED #1 (Spec #15)	ED (0% runoff volume reduction	0.00	0.00	0	0	0	15	0.00	0.00	0.00	0.00			10	0.00	0.00	0.00	0.00
8.b. ED #2 (Spec #15)	impervious acres draining to	0% runoff volume reduction	0.00	0.00	0	0	0	15	0.00	0.00	0.00	0.00			10	0.00	0.00	0.00	0.00
6.D. ED #2 (Spec #15)		5% runoff volume reduction	0.15	0.00	0	0	0	15	0.00	0.00	0.00	0.00			10	0.00	0.00	0.00	0.00
9. Sheetflow to Fiter/Open Space															9. Sheetflow to	Conservation A	rea or Filter Strio		
9.a. Sheetflow to Conservation Area	conserved open space turf acres draining to conserved 75	5% runoff volume reduction for treated area 5% runoff volume reduction	0.75	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00
with A/B Soils (Spec #2)	open space impervious acres draining to conserved open space	for treated area	0.75	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00
9.b. Sheetflow to Conservation Area with C/D Soils (Spec #2)	open space	for treated area 6% runoff reduction volume for treated area	0.50	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00
Sheetflow to Vegetated Filter Strip in A Soils or Compost Amended	conserved open space	6% runoff volume reduction for treated area 6% runoff reduction volume	0.50	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00
Strip in A Soils or Compost Amended B/C/D Soils (Spec #2 & #4)	open space	for treated area	0.50	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00
	1 1 1													1					
	TO	TAL IMPERVIOUS COVER TOTAL TURF AREA	TREATED (ac)	0.00															
	10	TOTAL TURF AREA	AREA CHECK	0.00 OK.															
	PHOSPI	TAL IMPERVIOUS COVER TOTAL TURF AREA TOTAL PHO	TREATED (ac)	0.00 OK.	ED ON SITE (Ib/vr) FION IN D.A. C (cl) ES IN D.A. C (lb/vr)	#D#V/0! 0 0.00										TOTALR	UNOFF REDUCTION	ON IN D.A. C (cf)	0
	PHOSPI	TOTAL TURF AREA	AREA CHECK SPHOROUS RE TOTAL I RUNOFF REDU	O.00 OK. MOVAL REQUIRE RUNOFF REDUCT CTION PRACTICE	FION IN D.A. C (cf) ES IN D.A. C (lb/vr)	0								NITROGENRI	MOVAL FROM F	TOTAL R	TION PRACTICES	IN D.A. C (lb/vr)	0
	PHOSPI	TOTAL TURF AREA TOTAL PHO HORUS REMOVAL FROM	AREA CHECK SPHOROUS RE TOTAL I RUNOFF REDU	O.00 OK. MOVAL REQUIRE RUNOFF REDUCT CTION PRACTICE	FION IN D.A. C (cf) ES IN D.A. C (lb/vr)	0								NITROGEN RI	MOVAL FROM R	UNOFF REDUC	TION PRACTICES	IN D.A. C (lb/vr)	0 0.00
Ambig Brasiline sheet	PHOSPI SEE WATER QUALIT	TOTAL TURF AREA TOTAL PHO HORUS REMOVAL FROM Y COMPLIANCE TAB	TREATED (ac) AREA CHECK SPHOROUS RE TOTAL RUNOFF REDU	O.00 OK. MOVAL REQUIRE RUNOFF REDUCT CTION PRACTICE	FION IN D.A. C (cf) ES IN D.A. C (lb/vr)	0								NITROGEN RI	MOVAL FROM R	UNOFF REDUC	TION PRACTICES	IN D.A. C (lb/vr)	0 0.00
Apply Practices that Rem	PHOSPI SEE WATER QUALIT	TOTAL TURF AREA TOTAL PHO HORUS REMOVAL FROM Y COMPLIANCE TAB	TREATED (ac) AREA CHECK SPHOROUS RE TOTAL RUNOFF REDU	O.00 OK. MOVAL REQUIRI RUNDEF REDUCI CTION PRACTICE MPLIANCE C. Area (excluding	FION IN D.A. C (cf) S IN D.A. C (bl/v) ALCULATIONS	0	Remaining		Phosphorus Load from	Untreated	Physikanus	Remaining		NITROGEN RI	MOVAL FROM F	Narogen Load from	TION PRACTICES	IN D.A. C (Ib/vr)	0.00
Apply Practices that Rem	PHOSP SEE WATER QUALIT SEE WATER QUALIT NOVE POllutants but Do No	TOTAL TURF AREA TOTAL PHO HORUS REMOVAL FROM Y COMPLIANCE TAB of Reduce Runoff V.	TREATED (ac) AREA CHECK SPHOROUS RE TOTAL RUNOFF REDU	0.00 OK. MOVAL REQUIR RUNOFF REDUCT CTION PRACTICE MPLIANCE CA	EION IN D.A. C (cf) S IN D.A. C (lb)vr) ALCULATIONS	0	Remaining Runoff Volume (cf)	Phosphorus Efficiency (%)	Phosphorus Load from Upstream RR Practices (bs)	Phosphorus Load to Practice	Phosphorus Removed By Practice (bs.)	Remaining Phosphorus Load (lbs.)	Downstrain Trialment to be Engloyed	NITROGEN RI	MOVAL FROM R	Narogen Load from	TION PRACTICES	IN D.A. C (Ib/vr)	0 0.00 Remaining Nitrogen Load (bs.)
	PHOSP SEE WATER QUALIT SEE WATER QUALIT NOVE POllutants but Do No	TOTAL TURF AREA TOTAL PHO HORUS REMOVAL FROM Y COMPLIANCE TAB	TREATED (ac) AREA CHECK SPHOROUS RE TOTAL RUNOFF REDU FOR SITE CC	OK. MOVAL REQUIR	Runoff from Upstream R Practices (cf)	0 0.00	Runoff	Phosphorus	Upstream RR	Phosphorus Load to Practice (lbs.)	Removed By Practice (lbs.)	Phosphorus Load (lbs.)	Downstram Trialment to be Employed	NITROGENRI	Nitrogen Efficiency (%)	Narogen Load from Upstream RR Practices	Untreated Untreated Nitrogen Load to Practice (ibs.)	IN D.A. C (Ib/vr)	0.00
Practice 10. Wet Swale (Coastal Plain)	PROSED AND SEE WATER QUALITY OF THE PROPERTY O	TOTAL TURF AREA TOTAL PHO HORUS REMOVAL FROM Y COMPLIANCE TAB	TREATED (ac) AREA CHECK SPHOROUS RE TOTAL RUNOFF REDU FOR SITE CC	O.00 OK. MOVAL REQUIRI RUNOFF REDUCI CTION PRACTICE MPLIANCE C. Area (excluding areas treated by upstream	Runoff from Upstream RR Practices (cf)	0 0.00	Runoff	Phosphorus Efficiency (%)	Upstream RR Practices (lbs)	Phosphorus Load to Practice (lbs.)	Removed By Practice (lbs.) 0.00	Phosphorus Load (lbs.)	Downstream Treatment to be Employed	MITROGEN RI	Nitrogen Efficiency (%)	Narogen Load from Upstream RR Practices	Untreated Untreated Nitrogen Load to Practice (fbs.)	NErogen Removed By Practice (bs.)	Remaining Nitrogen Load (lbs.)
Practice	PROSED AND SEE WATER QUALITY OF THE PROPERTY O	TOTAL TURF AREA TOTAL PHO HORUS REMOVAL FROM Y COMPLIANCE TAB	TREATED (ac) AREA CHECK SPHOROUS RE TOTAL RUNOFF REDU FOR SITE CC	O.00 OK. MOVAL REQUIRING MOVAL REQUIRING MPLIANCE C.I MPLIANCE C.I Area (excluding areas treated by upstream practices)	Runoff from Upstream R Practices (cf)	0 0.00	Runoff	20	Upstream RR	Phosphorus Load to Practice (lbs.)	Removed By Practice (lbs.)	Phosphorus Load (lbs.)	Downstream Treatment to be Employed	MTROGENRI	Nitrogen Efficiency (%)	Narogen Load from Upstream RR Practices	Untreated Untreated Nitrogen Load to Practice (ibs.)	IN D.A. C (Ib/vr)	0.00
Practice 10. Wet Swale (Coastal Plain)	PIGEP SEE WATER QUALIT SEE WATER QUALIT Unit Importous acres draining to set seels and access districts to set seels Importous acres draining to water seels Importous acres draining to water seels	TOTAL TURF AREA TOTAL PHO HORUS REMOVAL FROM Y COMPLIANCE TAB	TREATED (ac) AREA CHECK SPHOROUS RE TOTAL RUNOFF REDU FOR SITE CC	O.00 OK. MOVAL REQUIRER EUROFF REDUCTION PAACHEL AFOR (excluding areas realed by upstream practices)	Runoff from Upstream RR Practices (cf)	0 0.00	Runoff	20	Upstream RR Practices (bs)	Phosphorus Load to Practice (lbs.) 0.00	Removed By Practice (lbs.) 0.00	Phosphorus Load (ibs.)	Downstream Treatment to be Employed	NTROGEN RI	Nitrogen Efficiency (Ng. 10. Wet Swale (Narogen Load from Upstream RR Practices	Untreated Nitrogen Load to Practice (lbs.)	NErogen Removed By Practice (bs.)	Remaining Nitrogen Load (bs.)
Practice 10. Wet Swale (Coastal Plain) 10.a. Wet Swale #1 (Spec #11)	SEE WATER QUALT SEE WATER QUALT Usa Imponous acres drawing to wat seeds and cost disting to wat seeds wat seeds and cost disting to wat seeds and cost disting to wat seeds and cost disting to wat seeds and cost disting to wat seeds	TOTAL TURF AREA TOTAL PHO HORUS REMOVAL FROM Y COMPLIANCE TAB	TREATED (ac) AREA CHECK SPHOROUS RE TOTAL RUNOFF REDU FOR SITE CC	O.00 OK. MOVAL REQUIRER UNDOFF REQUIRER OTROM PRACTICE MPLIANCE C. Area (excluding areas treated by upstream practices) 000 000 000	Runoff from Upstream RR Practices (cf)	0 0.00	Runoff	20 20 40	Upstream RR Practices (bs)	Phosphorus Load to Practice (lbs.) 0.00 0.00	Removed By Practice (lbs.) 0.00 0.00	Phosphorus Load (lbs.) 0.00 0.00	Description Treatment to be Employed	NTROGEN N	Nitrogen Efficiency (%) 10. Wet Swale (20 20	Narrogen Load from Upstream RR Practices Cossal Fish 0.00 0.00	Untreated Nitrogen Load to Practice (lbs.) 0.00 0.00	Ntrogen Removed By Practice (bs.)	Remaining Nitrogen Load (bs.)
Practice 15. Wet Swale (Coastal Plant) 10. Wet Swale \$1 (Spec \$11) 10. Wet Swale \$1 (Spec \$11) 10. Wet Swale \$2 (Spec \$11) 11. Filterion Practices	SEE WATER QUALIT SEE WATER QUALIT Use Impervious sorce drawing to set seals Impervious designing to well seals Impervious sorce drawing to set seals Impervious sorce drawing to set seals Impervious sorce drawing to set seals Impervious sorce drawing to Impervious sorce drawing to Impervious sorce drawing to	TOTAL TURF AREA TOTAL PHO HORUS REMOVAL FROM Y COMPLIANCE TAB	TREATED (ac) AREA CHECK SPHOROUS RE TOTAL RUNOFF REDU FOR SITE CC	O.00 OK. MOVAL REQUIRER UNDOFF REQUIRER OTROM PRACTICE MPLIANCE C. Area (excluding areas treated by upstream practices) 000 000 000	Runoff from Upstream RR Practices (cf)	0 0.00	Runoff	20 20 40 40	Upstream RR Practices (bs)	Phosphorus Load to Practice (lbs.) 0.00 0.00	Removed By Practice (lbs.) 0.00 0.00	Phosphorus Load (lbs.) 0.00 0.00	Downstrain Treatment to be Engloyed	NITROGEN RI	Nitrogen Efficiency (N) 10. Wet Swate (1) 20 20 20 20 20 20 20	Narrogen Load from Upstream RR Practices Cossal Fish 0.00 0.00	Untreated Introduced In	Ntrogen Removed By Practice (bs.)	Remaining Nitrogen Load (bs.)
Practice 10. Wet Swale (Coostal Plain) 10.a. Wet Swale #1 (Spot #11) 10.b. Wet Swale #2 (Spot #11)	PROOF POLICE AND A PROOF POLICE AND A PROOF POLICE AND A PROOF POLICE AND A PROOF POLICE AND A PROOF POLICE AND A PROOF POLICE AND A PROOF POLICE AND A PROOF POLICE AND A PROPERTY AND A PROOF POLICE AND A PROPERTY AND A PROPERTY AND A PROPERTY AND A PROOF POLICE AND A PROPERTY AND A PROPERTY AND A PROPERTY AND A PROOF POLICE AND A PROPERTY AND A PRO	TOTAL TURF AREA TOTAL PHO HORUS REMOVAL FROM Y COMPLIANCE TAB	TREATED (ac) AREA CHECK SPHOROUS RE TOTAL RUNOFF REDU FOR SITE CC	O.00 OK. MOVAL REQUIRER UNDOFF REQUIRER OTROM PRACTICE MPLIANCE C. Area (excluding areas treated by upstream practices) 000 000 000	IN A LOLA CIGHTON SA NA CANADA	0 0.00	Runoff	20 20 40	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	Downstream Treatment to be England	NTROGENE	Nitrogen Efficiency (%) 10. West Swale (20 20 20	Narogen Load from Upstream RR RR Practices Costal Pinh 0.00 0.00 0.00 ctices	Untreated Wiregen Load to Practice (ba.) 0.00 0.00 0.00	NP D.A. C (Bhirt) Nitrogen Removed By Practice (Bs.) 0.00 0.05	0.00 Remaining Nirogen Load (bs.) 0.00 0.00 0.00 0.00
Practice 15. Wet Swale (Coastal Plant) 10. Wet Swale \$1 (Spec \$11) 10. Wet Swale \$1 (Spec \$11) 10. Wet Swale \$2 (Spec \$11) 11. Filterion Practices	SEE WATER QUALIT SEE WATER QUALIT Unit Unit Imperious acres draining to wet seels Imperious acres draining to real seels Imperious acres draining to files Imperious acres draining to files Imperious acres draining to files Imperious acres draining to	TOTAL TURF AREA TOTAL PHO HORUS REMOVAL FROM Y COMPLIANCE TAB	TREATED (ac) AREA CHECK SPHOROUS RE TOTAL RUNOFF REDU FOR SITE CC	O.00 OK. MOVAL REQUIRER UNDOFF REQUIRER OTROM PRACTICE MPLIANCE C. Area (excluding areas treated by upstream practices) 000 000 000	Runoff from Upstream RR Practices (cf)	0 0.00	Runoff	20 20 40 40 60	Upstream RR Practices (bs)	Phosphorus Load to Practice (lbs.) 0.00 0.00	Removed By Practice (lbs.) 0.00 0.00	Phosphorus Load (lbs.) 0.00 0.00	Downstream Treatment to be Engloyed	NTROGENE	Nitrogen Efficiency (%) 10. Wet Swale (20 20 20 21. Filtering Pri 20 20 20	Narrogen Load from Upstream RR Practices Cossal Fish 0.00 0.00	Untreated Introduced In	Ntrogen Removed By Practice (bs.)	Remaining Nitrogen Load (bs.)
Practice 15. Wet Swale (Constel Plain) 10. Wet Swale #1 (Spec #1) 10. Wet Swale #2 (Spec #1) 10. Wet Swale #2 (Spec #1) 11. #Barton Practices 11. #Blatton Practices #1 (Spec #12)	SEE WATER QUALIT SEE WATER QUALIT Unit Unit Imperious acres draining to wet seels Imperious acres draining to real seels Imperious acres draining to files Imperious acres draining to files Imperious acres draining to files Imperious acres draining to	TOTAL TURF AREA TOTAL PHO HORUS REMOVAL FROM Y COMPLIANCE TAB	TREATED (ac) AREA CHECK SPHOROUS RE TOTAL RUNOFF REDU FOR SITE CC	OND ONE MANYAL REQUIREMENT REQ	IN A COLOR OF THE	0 0.00	Runoff	20 20 40 40 60 66	0.00 0.00 0.00 0.00 0.00 0.00	Phosphorus Load to Practice (bs.) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	Downstream Trialstreet to be Employed	NTROGEN	Nitrogen Efficiency (%) 10. West Swate 6 20 20 20 21. Filtering Pro	Narogen Load from Upstream RR RP Practices Costal Pinin 0.00 0.00 0.00 0.00 0.00 0.00	Untreated Nivegen Load to Practice (Bs.) 0.00 0.00 0.00 0.00 0.00 0.00	NPOS G (BM)	0.00 Remaining Ntrogen Load (bs.) 0.00 0.00 0.00 0.00 0.00 0.00

2.a.Constructed Wetland #1 (Spec #1)	tud across desiring to well-and		0.00	0.00	0		60	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.0
E-H-CO-SHIP THE HISTORY FT TOURS FT	impervious acres draining to							5,500	50.50	0.00	0.00			0.00			-
	wetland		0.00	0.00	0	0	75	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.0
2.b. Constructed Wetland #2 (Spec #1	turf acres draining to wetland		0.00	0.00	0	0	75	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.0
13. Wet Ponds													13. Wet Ponds				
	impervious acres draining to				0		50										
	wet pond		0.00	0.00	0	0	50	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.0
13.a. Wet Pond #1 (Spec #14)	turf acres draining to wet pond		0.00	0.00	0	0	50	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.0
	impervious acres draining to wet nond		0.00	0.00			45	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	
13.b. Wet Pond #1 (Coastal Plain)	wet points		0.00	0.00	- 0	- 0	-60	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.0
(Spec #14)	turf acres draining to wet pond		0.00	0.00	0	0	45	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.0
	impervious acres draining to wet pond		0.00	0.00	0		75	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.0
	WHI 200 M							5.50	50,50	0.00	0.00			0.00		0.52	
13.c. Wet Pond #2 (Spec #14)	turf acres draining to wet pond		0.00	0.00	0	0	75	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.0
	impervious acres draining to wet pond		0.00	0.00	0	0	65	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.0
13.d. Wet Pond #2 (Coastal Plain)																	
(Spec #14)	turf acres draining to wet pond		0.00	0.00	0	0	65	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.0
14 Manufactured BMP													14 Manufactured				
14. Manufactured BMP	impervious acres draining to												14. Manufactured	EMP			
	device		0.00	0.00	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.0
14. Insert Name of Device	tuf acres draining to device		0.00	0.00	0			0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.0
									-								
	TOTAL IMPERVIOUS COVER		0.00														
	TOTAL TORP ARE		0.00														
		AREA CHECK OK.										-					-
	PHOSPHORUS REMOVAL BY PRACTICES T				0.00												
	 	TOTAL PHOSPHOR	RUS REMOVAL IN	D.A. C (lb/vr)	0.00												
				III ATIONE													
	SEE WATER QUALITY COMPLIANCE TAR																
	SEE WATER QUALITY COMPLIANCE TAE	FOR SITE COMP	LIANCE CALC	OLATIONS													
	SEE WATER QUALITY COMPLIANCE TAB				0.00												

VDCR							_	_	1									-	1
Drainage Area D Land Cover (acres	A soils B Soils	C Soils D Soils	Totals	Land Cover Rv															
Forest/Open Space (acres) undisturbed, protected forest/open																			
space or reforested land Managed Turf (acres) – disturbed,	0.00 0.00	0.00 0.00	0.00	0.00															
graded for yards or other turf to be mowed/managed	0.00 0.00	0.00 0.00	0.00	0.00															
Impervious Cover (acres)	0.00 0.00	0.00 0.00	0.00	0.00															
		Total	0.00				opment Treatme	ent Volume (cf)	0										
Apply Runoff Reduction P	Practices to Reduce Tr	eatment Volume & Po	ost-Develop	ment Load in	Drainage Are	ea D										Nitrogen			
					Wat		Damelele -		Phosphorus Load from	Untreated	Discourie and	Daniel de la constante de la c				Load from Upstream	Untreated		Remaining
				Credit Area	Volume from Upstream RR	Runoff	Remaining Runoff	Phosphorus	Upstream RR	Phosphorus Load to Practice	Removed By	Remaining Phosphorus			Nitrogen Efficiency (%)	RR	Nitrogen Load to Practice (lbs.)	Nitrogen Removed By	Nitrogen Load (lbs.)
Credit	Unit	Description of Credit	Credit	(acres)	Practice (cf)	Reduction (cf)	Volume (cf)	Efficiency (%)	Practices (bs)	(lbs.)	Practice (lbs.)	Load (lbs.)	Downstream Treatment to be Employed		Efficiency (%)	Practices	Practice (lbs.)	Practice (lbs.)	Load (lbs.)
1. Vegetated Roof															1. Green Roof				
1.a. Vegetated Roof #1 (Spec #5)	acres of green roof	45% runoff volume reduction	0.45	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00
1.b. Vegetated Roof #2 (Spec #5)	acres of arms roof	60% a noff values reduction	0.60	0.00	0				0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00
2. Rooftop Disconnection	<u>, </u>							_							2. Impervious Si	urface Disconn	ection		
2.a. Simple Disconnection to A/B Soils (Spec #1)	impervious acres disconnected	50% runoff volume reduction for treated area	0.50	0.00	0	0	0		0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00
2.b. Simple Disconnection to C/D		25% runoff volume reduction	1																0.00
Soils (Spec #1) 2.c. To Soil Amended Filter Path as	impervious acres disconnected	for treated area	0.25	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00
per specifications (existing C/D soils) (Spec #4)	impenious some disconnected	50% runoff volume reduction for treated area	0.50	0.00					0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00
2.d. To Dry Well or French Drain #1	III per viola acrea discorracion	50% runoff volume reduction	0.50	0.00	Ü		-	-	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00
(Microinfilitation #1) (Spec #8) 2.e. To Dry Well or French Drain #2	impervious acres disconnected	for treated area 90% runoff volume reduction	0.50	0.00	0	0	0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00
(Micro-Infiltration #2) (Spec #8)	impervious acres disconnected	for treated area	0.90	0.00	0	0	0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00
2.f. To Rain Garden #1 (Micro- Bioretention #1) (Spec #9)	impervious acres disconnected	40% of volume captured	0.40	0.00	0	0	0	25	0.00	0.00	0.00	0.00			40	0.00	0.00	0.00	0.00
2.c. To Rain Garden #2 (Micro-	III DON TO ME BELLE CONCURSION	90% pupoff volume reduction	1		, i				0.00	50,502	V.300	0.00				0.00		0.00	0.00
Bioretention #2) (Spec #9)	impervious acres disconnected	for treated area based on tank size and	0.80	0.00	0	0	0	50	0.00	0.00	0.00	0.00			60	0.00	0.00	0.00	0.00
2.h. To Rainwater Harvesting (Spec	impende	design spreadsheet (See Spec #6)	0.07		,														
23. To Stormwater Planter (Urban	impuryous acres captured	40% runoff volume reduction	1 000	0.00		0			0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00
Bioretentioni (Spec #9. Appendix A)	impervious acres disconnected	for treated area	0.40	0.00	0	0	0	25	0.00	0.00	0.00	0.00			40	0.00	0.00	0.00	0.00
a Barresta Barres	·												·						
3. Permeable Pavement	acres of permeable pavement -														3. Permeable Pa	verment			
3.a. Permeable Pavement #1 (Spec #	acres of "external" (upgradient) impervious pavement	45% runoff volume reduction	0.45	0.00	0	0	0	25	0.00	0.00	0.00	0.00			25	0.00	0.00	0.00	0.00
3.b. Permeable Pavement #2 (Spec #	7								2.00	2.00						2.00			
	acres of permeable pavement	75% runoff volume reduction	0.75	0.00	0	0	0	25	0.00	0.00	0.00	0.00			25	0.00	0.00	0.00	0.00
4. Grass Channel															4. Grass Channi	el .			
	impervious acres draining to																		
4.a. Grass Channel A/B Soils (Spec #3)	grass channels turf acres draining to grass	20% runoff volume reduction	0.20	0.00	0	0	0	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00
	channels	20% runoff volume reduction	n 0.20	0.00	0	0	0	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00
4.b. Grass Channel C/D Soils (Spec #3	impervious acres draining to grass channels	10% runoff volume reduction	n 0.10	0.00	0	0	0	15	0.00	0.00	0.00	0,00			20	0.00	0.00	0.00	0.00
Grada Griatina Gru Solls (Spec #3	turf acres draining to grass channels			0												2.50		0.00	
4.c. Grass Channel Compost	impervious acres draining to	10% runoff volume reduction	0.10	0.00	0	0	0	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00
Amended Soils as per specs (see	grass channels	30% runoff volume reduction	0.20	0.00	0	0	0	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00
Spec #4)	turf acres draining to grass channels	30% runoff volume reduction	0.20	0.00	0	0	0	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00
													1						
5. Drv Swale															5. Dry Swale				
5.a. Dry Swale #1 (Spec #10)	impervious acres draining to dry swale	40% runoff volume reduction	n 0.40	0.00	0	0	0	20	0.00	0.00	0.00	0.00			25	0.00	0.00	0.00	0.00
S.E. Diy Swall #1 (Spec #10)																			
	turf acres draining to dry swale impervious acres draining to dry	40% runoff volume reduction	0.40	0.00	0	0	0	20	0.00	0.00	0.00	0.00			25	0.00	0.00	0.00	0.00
5.b. Dry Swale #2 (Spec #10)	swale	60% runoff volume reduction	0.60	0.00	0	0	0	40	0.00	0.00	0.00	0.00			35	0.00	0.00	0.00	0.00
	turf acres draining to dry swale	60% runoff volume reduction	0.60	0.00	0	0	0	40	0.00	0.00	0.00	0.00			35	0.00	0.00	0.00	0.00
6. Bioretention		1													6. Bioretention				
6.a. Bioretention #1 or Urban	impervious acres draining to bioretention	40% runoff volume reduction	0.40	0.00	0	0	0	25	0.00	0.00	0.00	0.00			40	0.00	0.00	0.00	0.00
Bioretention (Spec #9)	turf acres draining to bioretention	40% runoff volume reduction	n 0.40	0.00				25	0.00	0.00	0.00	0.00			40	0.00	0.00	0.00	0.00
	impervious acres draining to			0.00	Ü		-		0.00	0.00	0.00	0.00				0.00		0.00	0.00
6.b. Bioretention #2 (Spec #9)	bioretention	80% runoff volume reduction	0.80	0.00	0	0	0	50	0.00	0.00	0.00	0.00			60	0.00	0.00	0.00	0.00
	turf acres draining to bioretention	80% runoff volume reduction	0.80	0.00	0	0	0	50	0.00	0.00	0.00	0.00			60	0.00	0.00	0.00	0.00
7. Infiltration	terroriore como destrico de														7. Infiltration				
7.a. Infiltration #1 (Spec #8)	impervious acres draining to infiltration	50% runoff volume reduction	0.50	0.00	0	0	0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00
	turf acres draining to infiltration	50% runoff volume reduction	0.50	0.00	0	0	0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00
	impervious acres draining to infiltration																		0.00
7.b. Infiltration #2 (Spec #8)	infiltration	90% runoff volume reduction	0.90	0.00	0	0	0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00
	turf acres draining to infiltration	90% runoff volume reduction	0.90	0.00	0	0	0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00
8. Extended Detention Pond	impervious acres draining to														8. Extended Det	ention Pond			
8.a. ED #1 (Spec #15)	ED	0% runoff volume reduction	0.00	0.00	0	0	0	15	0.00	0.00	0.00	0.00			10	0.00	0.00	0.00	0.00
	turf acres draining to ED	0% runoff volume reduction	0.00	0.00	0	0	0	15	0.00	0.00	0.00	0.00			10	0.00	0.00	0.00	0.00
	impervious acres draining to ED	15% runoff volume reduction	n 0.15	0.00					0.00	0.00	000	0.00			40	0.00	0.00	0.00	0.00
8.b. ED #2 (Spec #15)		15% fulbil volume reduction	0.15	0.00		0	0	15	0.00	0.00	0.00	0.00			10	0.00	0.00	0.00	0.00
 	turf acres draining to ED	15% runoff volume reduction	0.15	0.00	0	0	0	15	0.00	0.00	0.00	0.00			10	0.00	0.00	0.00	0.00
9. Sheetflow to Filter/Open Space															9. Sheetflow to	Consequelle	krea or Filter Strip		
Someonion to Pitter/Uten State	impervious acres draining to	75% runoff volume reduction													Commentow to	water values a	ar or Frier Strib		
9.a. Sheetflow to Conservation Area	conserved open space	for treated area	0.75	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00
with A/B Soils (Spec #2)	open space	for treated area	0.75	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00
1	impervious acres draining to conserved open space	for treated area	0.50	0.00	0	0	0		0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00
9.b. Sheetflow to Conservation Area with C/D Soils (Spec #2)				0~		_				0.55	0.53						0.00	0.00	0.77
	impervious acres draining to	50% runoff volume reduction	1	7,00	0		0		0.00	0.00	0.00	0.00			0	0.00			0.00
9.c. Sheetflow to Vegetated Filter Strip in A Soils or Compost Amended	conserved open space	for treated area	0.50	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00
Strip in A Soils or Compost Amended B/C/D Soils (Spec #2 & #4)	open space	for treated area	0.50	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00
1		1 1		1	1	1	1	1	1				1			1			1
		TOTAL IMPERVIOUS COVER	R TREATED (ac)	0.00															
		TOTAL TURF ARE		0.00															
	\vdash		AREA CHECK	OK.												$\vdash =$			
		TOTAL PH	OSPHOROUS RE	MOVAL REQUIRE	D ON SITE (Ib/vr)	#D/V/0!													
	PHO	SPHORUS REMOVAL FROM	TOTAL I	CTION PRACTICE	ION IN D.A. D (cf) S IN D.A. D (lb/vr)	0.00										TOTAL	RUNOFF REDUCTI	N IN D.A. D (cf)	0
	SEE WATER QUAL	ITY COMPLIANCE TAB		OMPLIANCE CA	LCULATIONS	<u> </u>							1	NITROGEN RE	MOVAL FROM R	UNOFF REDU	UTION PRACTICES	IN D.A. D (lb/vr)	0.00
	1		1																
l e																			
			L					-											-
Apply Practices that Rem	ove Pollutants but Do	Not Reduce Runoff \	/olume	1	1	1	1	l	1				1			1			l
,				Area (excluding					Phosphorus	Untreated						Nitrogen Load from			
1					Runoff from	Runoff	Remaining Runoff	Phosphorus	Load from Upstream RR	Phosphorus	Phosphorus Removed By	Remaining Phosphorus			Nitrocas	Upstream	Untreated	Nitrogen	Remaining
Practice	Unit	Description of Credit	Credit	upstream practices)	Upstream RR Practices (cf)	Runoff Reduction (cf)	runoff Volume (cf)	Efficiency (%)	Upstream RR Practices (lbs)	Load to Practice (lbs.)	Removed By Practice (lbs.)	- nospnorus Load (lbs.)	Downstream Treatment to be Employed		Nitrogen Efficiency (%)	RR Practices	Nitrogen Load to Practice (lbs.)	Practice (lbs.)	Nitrogen Load (lbs.)
10. Wet Swale (Coastal Plain)															10. Wet Swale (
Old State of	impervious acres draining to																		
Ī	wet swale		0.00	0.00	0.00	0	0	20	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00
10.a. Wet Swale #1 (Spec #11)				0.00	0.00	0	0	20	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00
I	impervious acres draining to wet swale	1		0.00	0.00	0	0	40	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00
I				7,00	0.00		0		0.00		0.00	0.00				0.00			0.00
10.b. Wet Swale #2 (Spec #11)	turf acres draining to wet swale	 		0.00	0.00	0	0	40	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00
11. Filtering Practices															11. Filtering Pra	rtices			
2000 Exemple and 60000	impervious acres draining to														and the Pre-	en.us			
				0.00	0.00	0	0	60	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00
	filter					0	0	60		0.00	0.00	0.00		1					0.00
11.a. Filtering Practice #1 (Spec #12)	filter turf acres draining to filter			0.00	0.00				0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	
11.a.Filterino Practice #1 (Seec #12)	filter			0.00	0.00	0	0	65	0.00	0.00	0.00	0.00			20	0.00		0.00	0.00
	turf acres draining to filter impervious acres draining to filter				0.00	0	0		0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00
-11.a Filtering Practice #1 (Spec #12) 11.b. Filtering Practice #2 (Spec #12)	filter turf acres draining to filter impervious acres draining to filter			0.00	0.00	0	0	65	0.00	0.00	0.00	0.00			20 20 20	0.00		0.00	0.00
	turf acres draining to filter impervious acres draining to filter				0.00	0	0		0.00		0.00	0.00				0.00 0.00	0.00		0.00
	turf acres draining to filter impervious acres draining to filter				0.00	0	0		0.00		0.00	0.00				0.00 0.00 0.00 Wetland	0.00		0.00

2.a.Constructed Wetland #1 (Spec #1)	tud across desiring to well-and		0.00	0.00			60	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	
E-H-CO-SHIP THE HISTORY FT TOURS FT	impervious acres draining to							5,500		0.00	0.00			0.00		-	-
	wetland		0.00	0.00	0	0	75	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.0
2.b. Constructed Wetland #2 (Spec #1	turf acres draining to wetland		0.00	0.00	0	0	75	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.0
13. Wet Ponds													13. Wet Ponds				
	impervious acres draining to				0		50										
	wet pond		0.00	0.00	0	0	50	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.0
13.a. Wet Pond #1 (Spec #14)	turf acres draining to wet pond		0.00	0.00	0	0	50	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.0
	impervious acres draining to wet nond		0.00	0.00			45	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	
13.b. Wet Pond #1 (Coastal Plain)	wet points		0.00	0.00	- 0	- 0	-6	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.0
(Spec #14)	turf acres draining to wet pond		0.00	0.00	0	0	45	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.0
	impervious acres draining to wet pond		0.00	0.00			75	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.0
	WHI 200 M						- / -	5.50	****	0.00	0.00			5.00			
13.c. Wet Pond #2 (Spec #14)	turf acres draining to wet pond		0.00	0.00	0	0	75	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.0
	impervious acres draining to wet pond		0.00	0.00	0	0	65	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.0
13.d. Wet Pond #2 (Coastal Plain)																	
(Spec #14)	turf acres draining to wet pond		0.00	0.00	0	0	65	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.0
14 Manufactured BMP													14 Manufactures				
14. Manufactured BMP	impervious acres draining to												14. Mainuractured	EMP			
	device		0.00	0.00	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.0
14. Insert Name of Device	tuf acres draining to device		0.00	0.00				0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.0
	TOTAL IMPERVIOUS COVER		0.00													├	+
	TOTAL TORP ARE		0.00														
		AREA CHECK OK.	-									-					+
	PHOSPHORUS REMOVAL BY PRACTICES T																
	 	TOTAL PHOSPHOR	RUS REMOVAL	IN D.A. D (lb/vr)	0.00												+
				CIII ATIONIC												 	+
	SEE WATER QUALITY COMPLIANCE TAR																
	SEE WATER QUALITY COMPLIANCE TAE	FOR SITE COMP	LIANCE CAL	COLATIONS													
	SEE WATER QUALITY COMPLIANCE TAB				0.00												

										_									$\overline{}$		
Drainage Area E																					
Drainage Area E Land Cover (acres	A soils	B Soils	C Soils D	D Solls	Totals	Land Cover Rv															
ForestiOpen Space (acres) = undisturbed, protected forest/open																			i l		
space or reforested land Managed Turf (acres) – disturbed,	0.00	0.00	0.00	0.00	0.00	0.00													-		
graded for yards or other turf to be mowed/managed	0.00	0.00	0.00	0.00	0.00	0.00													i l		
Impervious Cover (acres)	0.00	0.00	0.00	0.00	0.00	0.00															
				Total	0.00				opment Treatme	ent Volume (cf)											
Apply Runoff Reduction F	Practices to F	Reduce Tre	atment Vo	olume & Po	ost-Develop	ment Load in	Drainage Are	a E										retrogen			
							Volume from		Remaining		Phosphorus Load from	Untreated Phosphorus	Phosphorus	Remaining				Load from Upstream	Untreated	Nitrogen	Remaining
						Credit Area	Upstream RR	Runoff	Remaining Runoff	Phosphorus	Load from Upstream RR	Load to Practice	Removed By	Phosphorus			Nitrogen	RR	Untreated Nitrogen Load to Practice (lbs.)	Removed By	Nitrogen Load (lbs.)
Credit			Describio	on or Creat	Credit	(lacres)	Practice (ct)	Reduction (ct)	Volume (cf)	Efficiency (%)	Practices (bs)	(105.)	Practice (lbs.)	LOSS (IDS.)	Downstream Treatment to be Employed		Efficiency (%)	Practices	Practice (lbs.)	Practice (lbs.)	Load (Ibs.)
1. Vegetated Roof	1																1. Green Roof				
1.a. Vegetated Roof #1 (Spec #5)	acres of or	reen roof	45% runoff vol	lume reduction	0.45	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00
1.b. Vegetated Roof #2 (Spec #5)	acres of or	reen roof	60% runoff vol	lume reduction	0.60	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00
2. Rooftop Disconnection																	2. Impervious Su	rface Disconn	ection		
2.a. Simple Disconnection to A/B Soils (Spec #1)	impervious acres	disconnected	50% runoff vol for treat	dume reduction ted area	0.50	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00
2.b. Simple Disconnection to C/D			25% runoff vol	lume reduction																	
Soils (Spec #1) 2.c. To Soil Amended Filter Path as	impervious acres	disconnected	for treat	ted area	0.25	0.00	0	- 0	- 0	0	0.00	0.00	0.00	0.00			- 0	0.00	0.00	0.00	0.00
per specifications (existing C/D soils) (Spec #4)	impervious acres	disconnected	50% runoff vol for treat	lume reduction ted area	0.50	0.00	0	0	0		0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00
2.d. To Dry Well or French Drain #1			50% runoff vol	lume reduction																	
(Microinfilitation #1) (Spec #8) 2.e. To Dry Well or French Drain #2	impervious acres	disconnected	for treat 90% runoff vol	ted area slume reduction	0.50	0.00		- 0	- 0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00
(Micro-Infiltration #2) (Spec #8) 2.f. To Rain Garden #1 (Micro-	impervious acres	disconnected	for treat	ted area	0.90	0.00	0	0	0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00
Bioretention #1) (Spec #9)	impervious acres	disconnected	40% of volum	me captured	0.40	0.00	0	0	0	25	0.00	0.00	0.00	0.00			40	0.00	0.00	0.00	0.00
2.g. To Rain Garden #2 (Micro- Bioretention #2) (Spec #9)	impervious acres	disconnected	80% runoff vol for treat	olume reduction ted area	0.80	0.00	0	0	0	50	0.00	0.00	0.00	0.00			60	0.00	0.00	0.00	0.00
2.h. To Rainwater Harvesting (Spec	III per vicus acres	GUSCUTECUC	based on ta	ank size and	0.00	0.00		-			0.00	0.00	0.00	0.00			- 00	0.00		0.00	0.00
#6)	impervious acr	res captured	oesign sprea Soed	adsheet (See c #6)	0.00	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00
2.i. To Stormwater Planter (Urban Bioretention) (Spec #9. Appendix A)	impenious accord	disconnected	40% runoff vol for treat	olume reduction	0.40	0.00		0	0	25			0.00	0.00			(0)	0.00	0.00	0.00	000
Acceptance (accept PM, Accepta A)	arquivious acres	- uscumented	or treat	and affel	0.40	3.00		- 0	U	2	0.00	0.00	0.00	0.00			40	0.00	0.00	0.00	0.00
3. Permeable Pavement																	3. Permeable Pa	vement			
3.a. Permeable Pavement #1 (Spec #	acres of permeat	ole pavement + al" (upgradient)																			
	impervious	pavement	45% runoff vol	lume reduction	0.45	0.00	0	0	0	25	0.00	0.00	0.00	0.00			25	0.00	0.00	0.00	0.00
3.b. Permeable Pavement #2 (Spec #	acres of permea	able pavement	75% runoff vol	lume reduction	0.75	0.00	0	0	0	25	0.00	0.00	0.00	0.00			25	0.00	0.00	0.00	0.00
						<u> </u>										H					
4. Grass Channel		an desire															4. Grass Channe				
4.a. Grass Channel A/B Soils (Spec	impervious acre grass ch	arne's	20% runoff vo	olume reduction	0.20	0.00	0	0	0	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00
#3)	turf acres drain chann	ning to grass	20% runoff vo	nkumo roduntic	0.20	0.00		0	0	45			0.00	0.00			20	0.00	0.00	0.00	0.00
	impervious acre	es draining to				3.00	0		0	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00
4.b. Grass Channel C/D Soils (Spec #:	3 grass tri	MITEG	10% runoff vo	olume reduction	0.10	0.00	0	0	0	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00
	turf acres drain chann		10% runoff vo	olume reduction	0.10	0.00	0	0	0	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00
4.c. Grass Channel Compost	impervious acre grass ch	es draining to	30% p.m.#	nkumo roduntic	0.20	0.00		0	0	45			0.00	0.00			20	0.00	0.00	000	0.00
Amended Soils as per specs (see Spec #4)	turf acres drain	ning to grass	rusott vo	TRANSCOON	0.20	0.0				10	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00
	chann	nels	30% runoff vo	olume reduction	0.20	0.00	0	0	0	15	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00
5. Dry Swale																	5. Dry Swale				
	impervious acres	draining to dry															3. DIV SWARE				
5.a. Dry Swale #1 (Spec #10)	SWB	ée .	40% runoff vo	olume reduction	0.40	0.00	0	0	0	20	0.00	0.00	0.00	0.00			25	0.00	0.00	0.00	0.00
	turf acres drainin		40% runoff vo	olume reduction	0.40	0.00	0	0	0	20	0.00	0.00	0.00	0.00			25	0.00	0.00	0.00	0.00
	impervious acres	draining to dry	60% runoff vo	alumo roduction	0.60	0.00		0		40	0.00	0.00	0.00	0.00			25	0.00	0.00	0.00	0.00
5.b. Dry Swale #2 (Spec #10)						0.00			- 0		0.00	0.00	0.00	0.00			35	0.00		0.00	0.00
	turf acres drainin	ng to dry swale	60% runoff vo	olume reduction	0.60	0.00	0	0	0	40	0.00	0.00	0.00	0.00			35	0.00	0.00	0.00	0.00
E Diameteration																	6 Dioretention				
o. Dipretendon	impervious acre	es draining to															o. Dioreteritori				
6.a. Bioretention #1 or Urban Bioretention (Spec #9)	biorete	ntion	40% runoff vo	olume reduction	0.40	0.00	0	0	0	25	0.00	0.00	0.00	0.00			40	0.00	0.00	0.00	0.00
	turf acres d biorete	ntion	40% runoff vo	olume reduction	0.40	0.00	0	0	0	25	0.00	0.00	0.00	0.00			40	0.00	0.00	0.00	0.00
	impervious acre biorete	es draining to	80% runoff vo	alume reduction	0.80	0.00	0	0	0	50	0.00	0.00	0.00	0.00			60	0.00	0.00	0.00	0.00
6.b. Bioretention #2 (Spec #9)	turf acres d		00/414401140	Julius recognists	0.00	0.00	Ü		-	- 30	0.00	0.00	0.00	0.00			- 00	0.00		0.00	0.00
	biorete	ntion	80% runoff vo	olume reduction	0.80	0.00	0	0	0	50	0.00	0.00	0.00	0.00			60	0.00	0.00	0.00	0.00
7 Infiltration																	7 Infiltration				
7. 8110 8501	impervious acre	es draining to																			
7.a. Infiltration #1 (Spec #8)	infiltra	tion	50% runoff vo	olume reduction	0.50	0.00	0	0	0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00
	turf acres drainin	g to infiltration	50% runoff vo	olume reduction	0.50	0.00	0	0	0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00
7.b. Infiltration #2 (Spec #8)	impervious acre infiltra	es draining to	90% runoff vo	alume reduction	0.90	0.00	0	0	0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00
7.b. miniation #2 (opec #6)																					
	turf acres drainin	o to infiltration	90% runoff vo	olume reduction	0.90	0.00	0	0	0	25	0.00	0.00	0.00	0.00			15	0.00	0.00	0.00	0.00
8. Extended Detention Pond																	8. Extended Det	ntion Pond			
	impervious acre	es draining to			0.00																
8.a. ED #1 (Spec #15)	EC)	0% runoff vol	lume reduction	0.00	0.00	0	- 0	- 0	15	0.00	0.00	0.00	0.00			10	0.00	0.00	0.00	0.00
	turf acres dra	ining to ED	0% runoff vol	lume reduction	0.00	0.00	0	0	0	15	0.00	0.00	0.00	0.00			10	0.00	0.00	0.00	0.00
8.b. ED #2 (Spec #15)	impervious acre	es draining to	15% runoff vo	olume reduction	0.15	0.00	0	0	0	15	0.00	0.00	0.00	0.00			10	0.00	0.00	0.00	0.00
U.S. E.D WZ (Optic #15)																					
	turf acres dra		-2% funoff vo	manu reduction	U.15	0.00				15	0.00	0.00	0.00	0.00			10	0.00	0.00	0.00	0.00
9. Sheetflow to Filter/Open Space																	9. Sheetflow to 0	onservation A	rea or Filter Strip		
l	impervious acre conserved o	es draining to	75% runoff vol	olume reduction	0.76	0.00		0	0				0.00	0.00			0	0.00	0.00	000	0.00
9.a. Sheetflow to Conservation Area	turf acres draining	g to conserved	75% runoff vol	lume reduction	W/b	3.00	0	-0			0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00
with A/B Soils (Spec #2)	open s impervious acre	pace	for treat	ted area	0.75	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00
Ī	conserved o	pen space	for treat	ted area	0.50	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00
9.b. Sheetflow to Conservation Area with C/D Soils (Spec #2)	turf acres draining open s	pace	for treat	ted area	0.50	0.00	0	0	0		0.00	0,00	0.00	0.00			0	0.00	0.00	0.00	0.00
	impervious acre	es draining to	50% runoff vol	lume reduction																	
9.c. Sheetflow to Vegetated Filter Strip in A Soils or Compost Amended	conserved of turf acres draining		for treat 50% runoff red	duction volume	0.50	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00
Strip in A Soils or Compost Amended B/C/D Soils (Spec #2 & #4)	open s	pace	for treat	ted area	0.50	0.00	0	0	0	0	0.00	0.00	0.00	0.00			0	0.00	0.00	0.00	0.00
						<u></u>					<u></u>		<u></u>								
					TREATED (ac)	0.00						1							\vdash		
			rota	L TURF AREA	r REALED (ac)	0.00															
					AREA CHECK	OK.													\Box		
H	+ =			TOTAL PHO	SPHOROUS RE	EMOVAL REQUIRE	ON SITE (Ib/w)	#DIV/0! 0	- -	-		H ===	H ===			-					
		PHOS	PHORUS REA	MOVAL FROM	RUNOFF REDU	RUNOFF REDUCT	S IN D.A. E (Ib/vr)	0.00								NITTOOPEN TO	MONAL PROFIT	TOTAL	UNOFF REDUCTION	ON IN D.A. E (cf)	0
	SEE WA	ATER QUALI	TY COMPLI	IANCE TAB	FOR SITE CO	OMPLIANCE CA	LCULATIONS									NII'ROGEN RE	MUVAL FROM R	ONUFF REDUC	ALIUN PRACTICES	IN U.A. E (Ib/vr)	U.00
						1	1				1										
													t e								
	1 1				1	1	-		1	1	-	 	 	-		-					
Apply Practices that Rem	nove Pollutan	ts but Do N	lot Reduce	e Runoff V	olume	<u> </u>	<u> </u>		<u> </u>	<u> </u>	<u></u>	<u></u>	<u></u>	<u></u>	<u> </u>						
						Area (excluding					Phosphorus	Untreated						Nitrogen Load from			
	1					areas treated by upstream practices)	Runoff from Upstream RR	Runoff	Remaining Runoff	Phosphorus	Load from Upstream RR	Phosphorus Load to Practice	Phosphorus Removed By	Remaining Phosphorus			Nitropen	Upstream	Untreated Nitrogen Load to	Nitrogen Removed By	Remaining Nitrogen
Practice	Un	a .	Descriptio	on of Credit	Credit	practices)	Practices (cf)	Reduction (cf)	Volume (cf)	Efficiency (%)	Practices (lbs)	(lbs.)	Practice (lbs.)	Load (lbs.)	Downstream Treatment to be Employed		Nitrogen Efficiency (%)	Practices	Nitrogen Load to I Practice (lbs.)	Practice (lbs.)	Load (bs.)
10. Wet Swale (Coastal Plain)																	10. Wet Swale (C				
	impervious acre wet se	es draining to			0.07		0.00	_		~							20				
					U.00	0.00		0	0	20	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00
	turf acres drainin	g to wet swale				0.00	0.00	0	0	20	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00
10.a. Wet Swale #1 (Spec #11)		es draining to wate				0.00	0.00	0	0	40	0.00	0.00	0.00	0.00			20	0.00	0.00	0.00	0.00
10.a. Wet Swale #1 (Spec #11)	impervious acre wet su					0.00	0.00			40		0.00					20		0.00	0.00	
	impervious acre wet su	n to wat -					0.00	U	U	40	0.00	0.00	0.00	0.00			20				0.00
10.a. Wet Swale #1 (Spec #11) 10.b. Wet Swale #2 (Spec #11)	impervious acre wet su turf acres drainin	g to wet swale																0.00	0.00		
10.b. Wet Swale #2 (Spec #11)	impervious acre wet su turf acres drainin																11. Filtering Pra	tices	0.00		
10.b. Wet Swale #2 (Spec #11)	impervious acre wet su																11. Filtering Pra	tices			
10.b. Wet Smale #2 (Spec #11) 11. Filtering Practices	impervious acre wet su turf acres drainin impervious acre filte	es draining to or				0.00	0.00	0	0	60	0.00	0.00	0.00	0.00			20	otices 0.00	0.00	0.00	0.00
10.b. Wet Swale #2 (Spec #11)	impervious acre turf acres drainin impervious acre filte turf acres drai	es draining to er ning to filter				0.00	0.00	0	0	60	0.00	0.00	0.00	0.00			11. Filtering Pra	0.00 0.00	0.00	0.00	0.00
10.b. Wet Smale #2 (Spec #11) 11. Filtering Practices	impervious acre wet su turf acres drainin impervious acre filte	es draining to ir ning to filter es draining to				0.00	0.00	0	0	60	0.00	0.00	0.00	0.00			20	0.00 0.00 0.00	0.00	0.00	0.00
10.b. Wet Swale #2 (Spec #11) 11. Filterina Practices .11 a Filterina Practice #1 (Spec #12)	impervious acro turf acres drainin impervious acro filte turf acres drai impervious acro filte	es draining to or ning to filter es draining to or				0.00	0.00	0	0		0.00		0.00	0.00			20 20 20		0.00		0.00
10.b. Wet Smale #2 (Spec #11) 11. Filtering Practices	impervious acre wet sv turf acres drainin impervious acre filte turf acres drai impervious acre filte	es draining to or ning to filter es draining to or				0.00		0 0	0 0	60 60 65 65	0.00	0.00	0.00	0.00			20	0.00 0.00 0.00	0.00	0.00	0.00 0.00 0.00
10.b. Wet Sanle #2 (Spec #11) 11. Filterina Practices 11.a. Filterina Practice #1 (Spec #12)	impervious acre wet su turf acres drainin impervious acre fate turf acres drai impervious acre fate turf acres drai impervious acre fate turf acres drai turf acres drai	es draining to er ining to filter es draining to er ining to filter				0.00	0.00	0	0		0.00 0.00 0.00		0.00	0.00			20 20 20		0.00		0.00 0.00 0.00
10.b. Wet Swale #2 (Spec #11) 11. Filtering Practices 11.a. Filtering Practice #1 (Spec #12)	impervious acro turf acres drainin impervious acro filte turf acres drai impervious acro filte	es draining to er ining to filter es draining to er ining to filter				0.00 0.00 0.00	0.00	0 0 0	0		0.00		0.00	0.00			20 20 20		0.00		0.00

2.a.Constructed Wetland #1 (Spec #1)		alan ta matland				0.00	0.00			60	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
Za Constitute Western #1 (Spec #1)	impervious ac					0.00	0.00	- 0		- 50	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
	wet					0.00	0.00	0	0	75	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
2.b. Constructed Wetland #2 (Spec #1	turf acres drain	ning to wetland				0.00	0.00	0	0	75	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
13. Wet Ponds																13. Wet Ponds	_			
	impervious ac	res draining to pond				0.00	0.00			50	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
		pontu				0.00	0.00				0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
13.a. Wet Pond #1 (Spec #14)	turf acres drain	ing to wet pond				0.00	0.00	0	0	50	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
	impervious ac					0.00	0.00				0.00	0.00	0.00	0.00		20	0.00			
13.b. Wet Pond #1 (Coastal Plain)	wet	pond				0.00	0.00	- 0	- 0	45	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
(Spec #14)	turf acres drain	ing to wet pond				0.00	0.00	0	0	45	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
	impervious ac																			
	wet	pond				0.00	0.00	0	0	75	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
13.c. Wet Pond #2 (Spec #14)	turf acres drain	ing to wet good				0.00	0.00	0	0	75	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	impervious ac																			
	wet	pond				0.00	0.00	0	0	65	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
13.d. Wet Pond #2 (Coastal Plain) (Spec #14)	turf acres drain					0.00	0.00		_		0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
(S000 #14)	turr acres drain	ing to wet bong				0.00	0.00	- 0	- 0	- 60	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
14. Manufactured BMP																14. Manufacture				
14. Manufactured BMP	impervious ac	res draining to														14. Manufacture	BMP			
	des					0.00	0.00	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
14. Insert Name of Device	turf acres drai	ning to device				0.00	0.00	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
		1	OTAL IMPE	RVIOUS COVER	TREATED (ac)	0.00														
			TOT	AL TURF AREA	TREATED (ac)	0.00														
			 	1	AREA CHECK	OK			-	-										
	PE	OSPHORUS R	EMOVAL BY			PHORUS REMOVA		0.00	-	-					-				 	-
	SEE W	ATER QUAL	ITY COMP	LIANCE TAB	FOR SITE CO	MPLIANCE CA	LCULATIONS													
									-	-										
		NITROGEN R	EMOVAL BY	PRACTICES TH	AT DO NOT RE	DUCE RUNOFF V	OLUME IN D.A. E.	0.00												
					TOTAL NO	TROGEN REMOVA	I IN D.A. E (lb/w)	0.00												

Site Results						
One results						
	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	AREA CHECK
IMPERVIOUS COVER	0.00	0.00	0.00	0.00	0.00	OK.
IMPERVIOUS COVER TREATED	0.00	0.00	0.00	0.00	0.00	OK.
TURF AREA	0.00	0.00	0.00	0.00	0.00	OK.
TURF AREA TREATED	0.00	0.00	0.00	0.00	0.00	OK.
AREA CHECK	OK.	OK.	OK.	OK.	OK.	51.0
Phosphorous						
TOTAL PHOSPHOROUS LOAD REDUCTION REQUIRED (LB/YEAR)	#DIV/0!					
,						
RUNOFF REDUCTION (cf)	0					
PHOSPHOROUS LOAD REDUCTION ACHIEVED (LB/YR)	0.00					
ADJUSTED POST-DEVELOPMENT PHOSPHOROUS LOAD (TP) (lb/yr)	0.00					
REMAINING PHOSPHOROUS LOAD REDUCTION (LB/YR) NEEDED	#DIV/0!					
Nitrogen (for information purposes)						
DUNIOSE DEDUCTION (-0	0					
RUNOFF REDUCTION (cf) NITROGEN LOAD REDUCTION ACHIEVED (LB/YR)	0.00					
MITROGEN LOAD REDUCTION ACRIEVED (LB/TR)	0.00					
ADJUSTED POST-DEVELOPMENT NITROGEN LOAD (TP) (lb/yr)	0.00					

		1 year storm	2 voor otorm	10 year storm	
Target Rainfall Event (in)		1-year storm 2.70	2-year storm 3.35	10-year storm 5.15	
Drainage Area A	0.00				
Drainage Area (acres) Runoff Reduction Volume (cf)	0.00				
, ,					
Drainage Area B	0.00				
Drainage Area (acres) Runoff Reduction Volume (cf)	0.00				
Trainer (et)					
Drainage Area C					
Drainage Area (acres) Runoff Reduction Volume (cf)	0.00				
<u>Drainage Area D</u> Drainage Area (acres)	0.00				
Runoff Reduction Volume (cf)	0.00				
, ,					
Drainage Area (agree)	0.00				
Drainage Area (acres) Runoff Reduction Volume (cf)	0.00				
Based on the use of Runoff Reduction practices in the s	alacted drainage areas	the enreadabast sale	pulatos an adjusted D	V and adjusts	d Curvo Number
based on the use of Kunon Reduction practices in the s	elected dramage areas,	, me spreadsneet cal	uiates an adjusted K	v Developed and adjuste	u Curve Number.
Drainage Area A		A soils	B Soils	C Soils	D Soils
Forest/Open Space undisturbed, protected forest/oper	Area (acres) CN	0.00 30	0.00 55	0.00 70	0.00 77
space or reforested land Managed Turf disturbed, graded for yards or other turf to		0.00	0.00	0.00	0.00
mowed/managed	ĊN	39	61	74	80
lana an de conse	Area (acres) CN	0.00	0.00	0.00	0.00
Impervious Cover	CIN	98	98	98	98 Weighted CN S
					0 1000
DV (1-1)	th no Dunoff Dadwer'	1-year storm	2-year storm	10-year storm	
RV _{Developed} (IN) W	th no Runoff Reduction) with Runoff Reduction	0.00		0.00	
Developed (III	Adjusted CN	#N/A	#N/A	#N/A	
	-				"
Drainage Area B Forest/Open Space undisturbed, protected forest/open	Area (acres)	A soils 0.00	B Soils 0.00	C Soils	D Soils 0.00
space or reforested land	CN	30	55	70	77
Managed Turf disturbed, graded for yards or other turf to	be Area (acres)	0.00	0.00	0.00	0.00
mowed/managed	CN Area (acres)	39 0.00	61 0.00	74 0.00	0.00
Impervious Cover	CN	98	98	98	98
					Weighted CN S
		1-year storm	2-year storm	10-year storm	0 1000
RV _{Developed} (in) w	th no Runoff Reduction		0.00	0.00	
RV _{Developed} (in	with Runoff Reduction		0.00	0.00	
	Adjusted CN	#N/A	#N/A	#N/A	
Drainage Area C		A soils	B Soils	C Soils	D Soils
Forest/Open Space undisturbed, protected forest/oper	Area (acres) CN	0.00	0.00	0.00	0.00
space or reforested land Managed Turf disturbed, graded for yards or other turf to	_	30 0.00	55 0.00	70 0.00	0.00
mowed/managed	CN	39	61	74	80
	Area (acres) CN	0.00	0.00	0.00	0.00
Impervious Cover	CIN	98	98	98	98 Weighted CN S
					0 1000
DV (1-1)	th no Dunoff Dadwer'	1-year storm	2-year storm	10-year storm	
RV _{Developed} (IN) W	th no Runoff Reduction with Runoff Reduction	0.00		0.00	
Developed (III	Adjusted CN	#N/A	#N/A	#N/A	
Durling A D					D.O.: !!-
Drainage Area D Forest/Open Space undisturbed, protected forest/open	Area (acres)	A soils 0.00	B Soils 0.00	C Soils 0.00	D Soils 0.00
space or reforested land	CN	30	55	70	77
Managed Turf disturbed, graded for yards or other turf to	be Area (acres)	0.00	0.00	0.00	0.00
mowed/managed	ČN Area (acres)	39 0.00	61 0.00	74 0.00	0.00
Impervious Cover	CN	98	98	98	98
·					Weighted CN S
		1-year storm	2-year storm	10-year storm	0 1000
RV _{Develand} (in) w	th no Runoff Reduction	1-year storm 0.00		0.00	
RV _{Developed} (in	with Runoff Reduction	0.00	0.00	0.00	
	Adjusted CN	#N/A	#N/A	#N/A	
Drainage Area E		A soils	B Soils	C Soils	D Soils
Forest/Open Space undisturbed, protected forest/oper		0.00	0.00	0.00	0.00
space or reforested land	CN	30	55	70	77

Managed Turf disturbed, graded for yards or other turf to be			0.00	0.00	0.00	
mowed/managed	CN	39	61	74	80	
	Area (acres)	0.00	0.00	0.00	0.00	
Impervious Cover	CN	98	98	98	98	
					Weighted CN	S
					0	1000.00
		1-year storm	2-year storm	10-year storm		
RV _{Developed} (in) with I	no Runoff Reduction	0.00	0.00	0.00		
	th Runoff Reduction		0.00	0.00		
	Adjusted CN	#N/A	#N/A	#N/A		

Virginia Runoff Reduction Method ReDevelopment Worksheet v2.7 Revised April 2013

Site Data Summary

Total Rainfall = 43 inches

Site Land Cover Summary

	A Soils	B Soils	C Soils	D Soils	Total	% of Total
Forest (acres)	0.00	0.00	0.00	0.00	0.00	0.00
Turf (acres)	0.00	0.00	0.00	0.00	0.00	0.00
Impervious (acres)	0.00	0.00	0.00	0.00	0.00	0.00
					0.00	0.00

Site Rv	#DIV/0!
Post Development Treatment Volume (ft ³)	0
Post Development TP Load (lb/yr)	0.00
Post Development TN Load (lb/yr)	0.00
Total TP Load Reduction Required (lb/yr)	#DIV/0!

Total Runoff Volume Reduction (ft ³)	0
Total TP Load Reduction Achieved (lb/yr)	0
Total TN Load Reduction Achieved (lb/yr)	0.00
Adjusted Post Development TP Load (lb/yr)	0.00
Remaining Phosphorous Load Reduction (Lb/yr) Required	0.00

Drainage Area Summary

	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	Total
Forest (acres)	0.00	0.00	0.00	0.00	0.00	0.00
Turf (acres)	0.00	0.00	0.00	0.00	0.00	0.00
Impervious (acres)	0.00	0.00	0.00	0.00	0.00	0.00
						0.00

Drainage Area Compliance Summary

	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	Total
TP Load Red. (lb/yr)	0.00	0.00	0.00	0.00	0.00	0.00
TN Load Red. (lb/yr)	0.00	0.00	0.00	0.00	0.00	0.00

Channel and Flood Protection

	Weighted CN		2-year storm Adjusted CN	10-year storm Adjusted CN
Target Rainfall Event (in)		2.70	3.35	5.15
D.A. A CN	0	#N/A	#N/A	#N/A
D.A. B CN	0	#N/A	#N/A	#N/A
D.A. C CN	0	#N/A	#N/A	#N/A
D.A. D CN	C	#N/A	#N/A	#N/A
D.A. E CN	C	#N/A	#N/A	#N/A

APPENDIX L

Long-Term Stormwater Management Facility
Maintenance Agreement

LONG-TERM STORMWATER MANAGEMENT FACILITY MAINTENANCE AGREEMENT

VSMP/Stormwater Permit #:			
TAX PARCEL NUMBER:	_		
THIS AGREEMENT, made and entered into between, whose legal address is County, Virginia, a political subdivision of its Board of Supervisors, Grantee, herein address is P.O. Box 100, Rustburg VA 245	, Grantor, her f the Commonwealth nafter called the "Cam	einafter called the , and of Virginia, acting	e "Owner," d Campbell by and through
	WITNESSETH:		
whereas, [Mag as Tax Parcel #, being of Campbell County, Virginia], in Deed Book No, referred to hereing as follows:	gisterial District of Car frecord in the [Clerk's c at Page o in as the "Property," v	mpbell County, Virgon Soffice of the Circon Toeed Instrument Which Property is I	ginia], identified cuit County of t
WHEREAS, Owner desires the approval of Management Plan (Plan File #), referred to as the gement measures and attached hereto and	ment Control and he "Plan," for eros d facilities, as requ which is expressly	Stormwater sion and uired by y incorporated
conveyance channels or permanent erosi within the confines of the Property, refer	ion and sediment con	ntrol measures and	_

WHEREAS, Campbell County and the Owner agree that the health, safety, and general welfare of the residents of Campbell County, Virginia require that on-site stormwater management

Facilities as shown on the Plan be constructed on the Property by the Owner and adequately maintained by the Owner;

NOW, THEREFORE, in consideration of the foregoing Property, the mutual benefits and covenants contained herein, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree as follows:

- 1. The on-site stormwater management Facilities shall be constructed by the Owner in accordance with the attached Plan and specifications, and, upon completion of construction of such Facilities Owner shall provide a construction record drawing as required by §62.1-44.15 of the Code of Virginia.
- The Owner shall maintain the Facilities in accordance with the maintenance procedures shown on the attached Plan to assure good working order acceptable to Campbell County. Such maintenance procedures shall meet or exceed those maintenance requirements set forth in the Stormwater Management Ordinance of the Campbell County.

3.		
	a.	The Owner identifiesas the person
		responsible for performing the required maintenance of the Facilities. The street
		address and telephone number where such person may be contacted are:
		; ()

- b. Owner hereby acknowledges that identification of such person shall not be deemed to relieve Owner, its administrators, executors, assigns, heirs, and any other successors in interest of its/their ultimate responsibilities under the provisions of this Agreement or under the pertinent provisions of [local code] or applicable statutes or regulations.
- c. Owner further agrees to provide written notification to Campbell County of the name, address, and telephone number of any person whom Owner may identify subsequently as the person responsible *for performing* required maintenance.
- 4. The Owner shall inspect the Facilities in accordance with and within the timeframes provided in the requirements set forth in the Stormwater Management Ordinance of Campbell County. The Owner shall provide a copy of the inspection report in accordance

to the inspection schedule to Campbell County within 30 calendar days of the required inspection date.

- 5. The Owner hereby grants permission to Campbell County, its authorized agents and employees to enter upon the Property and to inspect the Facilities upon providing Owner ten (10) calendar days written notice by first class mail. Such notice requirement may be waived or modified by agreement between the Owner and the Campbell County. Such right of access will *allow* Campbell County to inspect the facility, but Campbell County is under no obligation to conduct periodic inspections. Defects or deficiencies discovered during any such inspection shall be documented and specific measures to be taken to remedy such defect or deficiency shall be described in writing, a copy of which shall be provided to Owner. Owner agrees to perform promptly all needed maintenance and correct defects and/or deficiencies reported to it by Campbell County. Such defects and/or deficiencies shall be corrected within a reasonable period of time as determined between Owner and Campbell County, but such period shall not exceed fifteen (15) calendar days.
- 6. Owner further agrees to waive the notice requirement specified in Paragraph 5 above when the Campbell County determines that an immediate inspection of the Facilities is necessary due to threat of imminent danger to life or property or other emergency. The Campbell County, or its agents, may enter immediately upon the Property and take whatever reasonable steps it deems necessary to mitigate the danger or emergency. Campbell County shall notify the Owner of such entrance as soon as possible but in no event later than twenty-four (24) hours after such entry. Alternatively, Campbell County may notify the Owner by telephone to take necessary action within a specified time period. Should Owner fail to respond, or should Owner inform Campbell County that it does not intend to act with the specified time period, then Campbell County, or its agents, may enter immediately upon the Property and take whatever reasonable steps it deems necessary to mitigate the danger or emergency.
- 7. In the event of notice being required under Paragraph 5 above or any other provision of this Agreement, such notice shall be deemed to have been given when put in writing and deposited in the U. S. Mail (first class mail with postage prepaid) to the following:

	
Name of person:	OR
Name of entity if a corporation, partnership, etc.:	

If to the Owner:

Name of officer AND title if a corporation, partnership, etc.:
Address:
Telephone Number:
If to Campbell County:
[LOCALITY ADMINISTRATOR]
[LOCALITY ADDRESS]

Owner further agrees to notify Campbell County in writing at the above address immediately upon any change in legal status, address, or telephone number of Owner.

- 8. In the event the Owner fails to maintain the Facilities, as shown on the attached Plan, in good working order acceptable to Campbell County, or to promptly correct defects and/or deficiencies reported to it by Campbell County within the prescribed time period, Campbell County may enter upon the Property after notice as required in Paragraph 5 above and take whatever steps it deems necessary to maintain said Facilities. This provision shall not be construed to allow Campbell County to erect any structure of a permanent nature on the land of the Owner without first obtaining written approval of the Owner. It is expressly understood and agreed that Campbell County is under no obligation to maintain or repair said Facilities, and in no event shall this Agreement be construed to impose any such obligations on Campbell County.
- 9. In the event Campbell County, pursuant to this Agreement, performs work of any nature, or expends any funds in performance of said work for labor, use of equipment, supplies, materials, and the like, the Owner, its administrators, executors, assigns, heirs, and any other successors in interest shall reimburse Campbell County upon demand, within thirty (30) calendar days of receipt thereof for all costs incurred by Campbell County hereunder.
- 10. Notwithstanding the above-mentioned remedies, Owner and Campbell County acknowledge that Campbell County may take such other additional enforcement actions as are set forth in Chapter 12 in the Campbell County Code.
- 11. It is the intent of this Agreement to ensure the proper maintenance of onsite Facilities by the Owner; provided, however, that this Agreement shall not be deemed to create or

- affect any additional liability of any party for damage alleged to result from or be caused by stormwater damage.
- 12. The Owner, its executors, administrators, assigns, heirs, and other successors of interest shall indemnify and hold Campbell County and its agents and employees harmless for any and all damages, accidents, casualties, occurrences, or claims which might arise or be asserted against Campbell County from the construction and/or maintenance of the described onsite Facilities by the Owner or Campbell County.
 - In the event a claim is asserted against Campbell County, its agents or employees, the Campbell County shall promptly notify the Owner and the Owner shall defend, at its own expense, any suit based on such claim. If any judgment or claim against Campbell County, its agents or employees shall be allowed, the Owner shall pay all costs and expenses in connection therewith.
- 13. Campbell County shall not pay any compensation to Owner, its administrators, executors, assigns, heirs, or any other successors in interest at any time for its use of the Property in any way necessary for the inspection and maintenance of the Facilities, including access to the Facilities.
- 14. This Agreement shall be governed by the laws of the Commonwealth of Virginia.
- 15. Plans and specifications for stormwater management facilities and measures to be undertaken on the subject property shall be attached hereto and are hereby incorporated by reference as a part of this Agreement.
- 16. This Agreement shall be recorded among the land records in the Clerk's Office of Campbell County, Virginia, and shall constitute a covenant running with the land, and shall be binding on the Owner, its administrators, executors, assigns, heirs, and any other successors in interest.
- 17. Such covenant running with the land shall be described in full or incorporated by reference into each deed of conveyance out of the described Property, and such covenant shall be noted on any subsequently recorded plat of subdivision or resubdivision of Property.

THE STATE OF THE SAUTHE		Owner, has affixed his signature
	SS WHEREOF,	
		on the day of
		У
	, on behalf of the Corpor	ation; <u>and</u>
VIRGINIA, has caused t	,	ERVISORS of Campbell County, by [<mark>NAME</mark>], <mark>[TITLE</mark>], on behalf o RGINIA.
[Signature]		(SEAL
[Print Name]		
	OR	
[Name of corporati	on, partnership]	
[Signature of Office	er] By:	(SE
[Print name of office	·	
	Ву:	•
		•
MONWEALTH OF VIRGIN	By:	•
MONWEALTH OF VIRGIN COUNTY OF	By: [NAME], [TITLE] IA,	
COUNTY OF	By: [NAME], [TITLE] IA,, to-wit: acknowledged before me this	(S
COUNTY OF	By: [NAME], [TITLE] IA,, to-wit: acknowledged before me this	(S
COUNTY OF	By: [NAME], [TITLE] IA,, to-wit: acknowledged before me this	ORS OF Campbell County, VIRGI
COUNTY OF	By: [NAME], [TITLE] IA,, to-wit: acknowledged before me this	(SI

My commission expires:	·		
OR			
COMMONWEALTH OF VIRGIN	•		
by	s acknowledged before me this _ _ [name of officer], [name of corporation], a \	_ [name of office held	l] of
the Corporation, Owner .		,	
(SEAL)	Notary Public		
My commission expires:			
COMMONWEALTH OF VIRGIN Campbell County, to-wit:	NIA,		
	s acknowledged before me this _ pell County, Virginia, on behalf of		
(SEAL)			

Notary Public

My commission expires:		

[A resolution, or a certified copy thereof, authorizing a designated officer of the corporation or other entity to execute this Agreement on behalf of the corporation or other entity shall be attached to this Agreement and recorded with said Agreement in the Clerk's Office of the Circuit Court of Campbell County, Virginia.]

RESOLUTION

f
ganized, validly existing and in
egally convened meeting of
duly called and held on the
uly adopted in accordance
, and is
, a Virginia
ecify office],
orporation is authorized to
ration any deed or other
erein, including but not limited
ment by and between the
g any easement or right-of-

BE IT FURTHER RESOLVED that the Secretary of the Corporation shall attach to such deed or other instrument a copy of this Resolution by the Board of Directors authorizing the above-named officer of the Corporation to execute, acknowledge, and deliver such deed or instrument on behalf of the Corporation.

I further certify that	is the duly elected and acting		
[speci	specify office] of the Corporation and, as such, has the authority to		
perform the powers listed above	· .		
IN WITNESS WHEREOF, I have he	ereunto subscribed my r	name hereto as Secret	ary of
	, on theda	y of, 20	•
[Name of Corporation	n]		-
[Signature of Corpora	ite Secretary]		(SEAL)
[Print name of Secret	ary]	, Secretary	/

APPENDIX M

Erosion and Sediment Control and Stormwater Management Facility (BMP) Bond Calculator

EROSION AND SEDIMENT CONTROL BOND CALCULATOR

Project:	Disturbed Acreage:	
Date:		

VESC Std.	DESCRIPTION	UNIT	UNIT COST	QUANTITY	TOTAL COST
3.01	Safaty Fanca	LF	\$18.00	0	\$0.00
3.02	Safety Fence Temporary Gravel Construction Entrance	EA	\$985.00	0	\$0.00
3.02	with Wash Rack	EA	\$3,400.00	0	\$0.00
3.03	Construction Road Stabilization	SY	\$5.00	0	\$0.00
3.04	Straw Bale Barrier	LF	\$3.75	0	\$0.00
3.05	Silt Fence (SF)	LF	\$3.75	0	\$0.00
3.06	Brush Barrier	LF	\$2.00	0	\$0.00
3.07	Storm Drain Inlet Protection (IP)	EA	\$135.00	0	\$0.00
3.08	Culvert Inlet Protection (CIP)	EA	\$190.00	0	\$0.00
3.09	Temporary Diversion Dike	LF	\$5.20	0	\$0.00
3.10	Temporary Fill Diversion	LF	\$2.00	0	\$0.00
3.11	Temporary Right of Way Diversion	LF	\$2.40	0	\$0.00
3.12	Diversion (DV)	LF	\$7.00	0	\$0.00
3.13	Temporary Sediment Trap (ST)	- Li	77.00	, , ,	φο.σσ
3.13	1 acre	EA	\$1,250.00	0	\$0.00
	2 acres	EA	\$2,100.00	0	\$0.00
	3 acres	EA	\$2,300.00	0	\$0.00
3.14	Temporary Sediment Basin (SB)	2,1	Ψ2,300.00	Ū	φο.σσ
0.2.	3 to 5.9 Acre Drainage Area	EA	\$3,000.00	0	\$0.00
	6 to 14.9 Acre Drainage Area	EA	\$6,000.00	0	\$0.00
	15 Acre Drainage Area	EA	\$9,200.00	0	\$0.00
3.15	Temporary Slope Drain	LF	\$5.75	0	\$0.00
3.16	Paved Flume	SY	\$52.00	0	\$0.00
3.17	Stormwater Conveyance Channel	.	φσ=.σσ	, ,	φο.σσ
0,12	Seeded	SY	\$10.00	0	\$0.00
	Sodded	SY	\$20.00	0	\$0.00
	Temporary Matting	SY	\$30.00	0	\$0.00
	Permanent Matting	SY	\$40.00	0	\$0.00
	Riprap	SY	\$60.00	0	\$0.00
3.18	Outlet Protection (OP)	EA	\$175.00	0	\$0.00
	Riprap	SY	\$60.00	0	\$0.00
	Grouted Riprap	SY	\$60.00	0	\$0.00
	Concrete	SY	\$45.00	0	\$0.00
3.19	Riprap	TN	\$20.00	0	\$0.00
3.20	Rock Check Dams (CD)	EA	\$165.00	0	\$0.00
3.21	Level Spreader	SY	\$10.00	0	\$0.00
3.22	Vegetative Streambank Stabilization	SY	\$350.00	0	\$0.00
3.23	Structural Streambank Stabilization	LF	\$17.00	0	\$0.00
3.24	Temporary Vehicular Stream Crossing	EA	\$2,500.00	0	\$0.00
3.25	Utility Stream Crossing	EA	\$1,800.00	0	\$0.00
3.26	Dewatering Structure	LF	\$3.00	0	\$0.00
3.27	Turbidity Curtain	LF	\$16.00	0	\$0.00
3.28	Subsurface Drain	LF	\$50.00	0	\$0.00
3.29	Surface Roughening	SF	\$0.25	0	\$0.00
3.30	Topsoiling	AC	\$1,500.00	0	\$0.00

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Project: Date:		_ Distu	irbed Acreage: _		
VESC Std.	DESCRIPTION	UNIT	UNIT COST	QUANTITY	TOTAL COST
3.31	Temporary Seeding	AC	\$1,875.00	0	\$0.00
3.32	Permanent Seeding	AC	\$2,250.00	0	\$0.00
3.33	Sodding	SY	\$5.00	0	\$0.00
3.34	Bermudagrass and Zoysiagrass Establishment	SY	\$7.50	0	\$0.00
3.35	Mulching	AC	\$3,750.00	0	\$0.00
3.36	Soil Stabilization Blankets and Matting	LF	\$2.50	0	\$0.00
3.37	Trees, Shrubs, Vines, and Ground Cover	SY	\$25.00	0	\$0.00
3.38	Tree Preservation and Protection	LF	\$9.00	0	\$0.00
3.39	Dust Control	LS	\$500.00	0	\$0.00
				ESC BOND	\$0.00 \$0.00
		25% Contingency Total ESC Bond			

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STORMWATER MANAGEMENT FACILITY (BMP) BOND CALCULATOR Disturbed Acreage: **Practice** No. DESCRIPTION UNIT UNIT COST QUANTITY **TOTAL COST Rooftop Disconnection** 1 LF \$5.00 0 \$0.00 **Down Spout Roof Drain** LF \$20.00 0 \$0.00 Turf Reinforcement (EC-2) SY \$3.00 0 \$0.00 Turf Reinforcement (EC-3) SY \$8.00 0 \$0.00 Sub-total: \$0.00 **Sheetflow to Vegetated Filter and Conserved Open Space** 2 \$2,000.00 \$0.00 Flow Bypass Structure EΑ 0 \$50.00 \$0.00 #57 Stone TN 0 #3 Stone TN \$25.00 0 \$0.00 Level Spreader LF \$15.00 0 \$0.00 Underdrain (for level spreader) LF \$20.00 0 \$0.00 Concrete Footer (for level spreader) CY \$350.00 0 \$0.00 Treated Timbers (6"x6") LF \$7.50 \$0.00 0 Jute / Excelsior mesh SY \$1.60 0 \$0.00 Gravel CY \$125.00 0 \$0.00 Filter Fabric SY \$2.81 0 \$0.00 \$2.10 \$0.00 Seeding SY 0 Plants / Shrubs SF \$2.50 0 \$0.00 \$1,000.00 \$0.00 Trees EΑ 0 PB - Excavated Soil (for permeable berm) CY \$10.00 0 \$0.00 TN \$45.00 0 \$0.00 Sand #8 Pea Gravel TON \$35.00 0 \$0.00 \$2.50 \$0.00 Geotextile SY O Sub-total: \$0.00 **Grass Channel** 3 Seeding SY \$2.10 0 \$0.00 Check Dam EΑ \$300.00 0 \$0.00 **Excavation & Embankment** CY \$6.00 0 \$0.00 Lining (for gravel flow spreader) SY \$2.50 0 \$0.00 E&SC Netting / Mats (E&SC spec 3.36) SY \$3.00 0 \$0.00 \$0.00 Sub-total: 4 **Soil Amendments** CY \$90.00 0 \$0.00 Compost Seeding SY \$2.10 0 \$0.00 Undercut CY \$6.00 0 \$0.00 Sub-total: \$0.00 **Vegetated Roof**

Extensive Green Roof (installed)

Intensive Green Roof (installed)

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\$10.00

\$25.00

0

0

Sub-total:

\$0.00

\$0.00

\$0.00

SF

SF

STORMWATER MANAGEMENT FACILITY (BMP) BOND CALCULATOR Disturbed Acreage: **Practice** No. DESCRIPTION UNIT UNIT COST QUANTITY TOTAL COST 6 **Rainwater Harvesting** \$0.00 Storage Tank GAL \$3.00 0 Excavation CY \$6.00 0 \$0.00 Pump EΑ \$4,000.00 0 \$0.00 **Booster Pump** EΑ \$2,000.00 0 \$0.00 Concrete Base CY \$400.00 0 \$0.00 Valves, Backflow Preventers, Piping LS \$4,000.00 0 \$0.00 \$0.00 Sub-total: **Permeable Pavement** CY \$6.00 0 \$0.00 Excavation/Embankment (Subgrade Prep) **Pervious Concrete** SF \$8.20 0 \$0.00 Porous Asphalt TN \$100.00 0 \$0.00 Stone Layer/Bedding Material TN \$50.00 0 \$0.00 **Interlocking Concrete Pavers** SY \$45.00 0 \$0.00 \$2.50 \$0.00 Filter Fabric (polypropylene) SY 0 Underdrain (perforated) LF \$20.00 0 \$0.00 Drop Inlet EΑ \$3,500.00 0 \$0.00 Observation well (PVC pipe) \$20.00 \$0.00 LF 0 Impermeable Liner (30 mil, PVC, geomembrane) SY \$5.00 0 \$0.00 Sub-total: \$0.00 8 Infiltration \$3,000.00 \$0.00 Flow Splitter EΑ 0 Topsoil CY \$40.00 0 \$0.00 Sand Layer CY \$45.00 \$0.00 0 Sod SF \$1.50 0 \$0.00 TN \$50.00 0 \$0.00 Aggregate Filter Fabric (polypropylene geotextile) SY \$2.50 \$0.00 n 4" PVC Cleanout LF \$20.00 \$0.00 0 \$0.00 Sub-total: 9 **Bioretention** \$0.00 CY \$90.00 0 Filter Media Excavation CY \$6.00 0 \$0.00 Riprap SY \$90.00 0 \$0.00 \$50.00 \$0.00 Stone Layer TN 0 6" Underdrain (schedule 40 PVC with cleanouts) \$20.00 \$0.00 LF 0 Turf SF \$1.50 0 \$0.00 Plants / Shrubs SF \$2.50 0 \$0.00 0 \$0.00 Hardwood Mulch (shredded, aged bark) SY \$5.00 Impermeable Liner (30 mil, PVC, geomembrane) SY \$5.00 \$0.00 0 LF \$75.00 \$0.00 **Outlet Pipe** 0 **Outlet Structure** EΑ \$5,000.00 0 \$0.00

Sub-total:

\$0.00

STORMWATER MANAGEMENT FACILITY (BMP) BOND CALCULATOR Disturbed Acreage: Date: **Practice** No. DESCRIPTION UNIT UNIT COST QUANTITY TOTAL COST **Dry Swale** 10 \$90.00 \$0.00 Filter Media CY 0 Riprap SY \$90.00 0 \$0.00 Excavation CY \$6.00 0 \$0.00 6" Underdrain (schedule 40 PVC with cleanouts) LF \$20.00 0 \$0.00 Check Dam EΑ \$300.00 0 \$0.00 Turf SF \$1.50 0 \$0.00 Plants / Shrubs SF \$2.50 \$0.00 0 Hardwood Mulch (shredded, aged bark) SY \$5.00 0 \$0.00 Impermeable Liner (30 mil, PVC, geomembrane) SY \$5.00 0 \$0.00 \$5,000.00 \$0.00 **Outlet Structure** EΑ 0 Sub-total: \$0.00 11 **Wet Swale** Excavation CY \$6.00 0 \$0.00 SY \$90.00 \$0.00 Riprap 0 \$0.00 Plants / Shrubs SF \$2.50 0 Turf SF \$1.50 0 \$0.00 Check Dam EΑ \$300.00 0 \$0.00 Sub-total: \$0.00 **Filtering Practice** 12 Filter Media CY \$90.00 0 \$0.00 Excavation CY \$6.00 0 \$0.00 Stone Layer ΤN \$50.00 0 \$0.00 6" Underdrain (schedule 40 PVC with cleanouts) LF \$20.00 0 \$0.00 SF \$1.50 0 \$0.00 Medium Aggregate Concrete Sand TN \$45.00 0 \$0.00 Underdrain/Cleanouts LF \$20.00 0 \$0.00 **Outlet Pipe** LF \$75.00 \$0.00 0 **Outlet Structure** \$5,000.00 \$0.00 EΑ 0 \$0.00 Sub-total: 13 **Constructed Wetland** \$5,000.00 0 \$0.00 Outfall/Outlet Structure EΑ Riprap SY \$90.00 0 \$0.00 **Outlet Pipe** LF \$75.00 0 \$0.00 Excavation & Embankment CY \$6.00 \$0.00 0 Plants/Shrubs SF \$3.00 0 \$0.00 Low Flow Pipe LF \$65.00 0 \$0.00

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\$0.00

Sub-total:

Project: Date:		-	Distu	rbed Acreage: _	
Practice					
No.	DESCRIPTION	UNIT	UNIT COST	QUANTITY	TOTAL COST
14	Wet Pond				
	Riser (w/ anti-flotation, anti-vortex, and trash rack devices)	EA	\$5,000.00	0	\$0.00
	Riprap	SY	\$90.00	0	\$0.00
	Pond Aeration	EA	\$4,000.00	0	\$0.00
	Plants/Shrubs	SF	\$3.00	0	\$0.00
	Outlet Pipe	LF	\$75.00	0	\$0.00
	Outlet Protection (riprap over filter fabric)	EA	\$300.00	0	\$0.00
	Low Flow Pipe	LF	\$65.00	0	\$0.00
	Concrete Weir	CY	\$400.00	0	\$0.00
	Liner	SY	\$5.00	0	\$0.00
			-	Sub-total:	\$0.00
15	Extended Detention Pond				
	Excavation & Embankment	CY	\$6.00	0	\$0.00
	Riprap	SY	\$90.00	0	\$0.00
	Pond Aeration	EA	\$4,000.00	0	\$0.00
	Plants/Shrubs	SF	\$3.00	0	\$0.00
	Outlet Pipe	LF	\$75.00	0	\$0.00
	Outlet Protection (riprap over filter fabric)	EA	\$300.00	0	\$0.00
	Outlet Structure	EA	\$5,000.00	0	\$0.00
			-	Sub-total:	\$0.00
			SWI	M BMP BOND	\$0.00
			25%	Contingency	\$0.00
			Total SWM	BMP Bond	\$0.00

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APPENDIX N

VSMP Permit & SWPPP Construction Inspection Report Form

VSMP PERMIT & SWPPP CONSTRUCTION INSPECTION REPORT

Proje	ect Name:	VSMP Permit Number:					
Proje	ect Address:	County/City:					
Proje	ect Operator:		Operat	or Telep	hone:		
Oper	ator Address:		County	/City:			
	ector Name:				e: Time:		
	ector Phone No:		•				
	eccor r mone rec.						
l ega	Status:						
Natu	re of Project:						
☐ C	ommercial 🗆 Industrial 🗆 Residential	□ Ro	ad	☐ Utili	ty \square Agriculture \square Other:		
Stage	e of Construction:						
□ Pi	re-Con Conference ☐ Clearing & Grubbing		Rough G	irading	☐ Building Construction		
☐ Fi	nish Grading	☐ Construction of SWM BMPs ☐ Other:					
□м	aintenance of SWM BMPs						
ITEM	General Information	YES	NO	N/A	Recommended Corrective Action and Notes		
1	Project has permit coverage to discharge stormwater:						
_	§62.144.15:26						
2	Permit application submitted: 9VAC25-880-50			1			
3	Project's coverage letter posted near the site's entrance Internet address for viewing of SWPPP or the location of						
	the SWPPP including name & telephone number of the						
	contact person posted						
5	SWPPP has been prepared: 9VAC25-880-50						
6	SWPPP on-site or made available during the inspection						
7	SWPPP signed in accordance with the regulations						
8	SWPPP being amended (maintained) and updated SWPPP revisions signed and dated						
9	Prior to commencing construction, the operator						
	obtained an approved ESC plan or agreement in lieu of a						
ITEM	plan: 9VAC25-880-30	YES	NO	N/A	Recommended Corrective Action and		
	I SWPPP CONTENT						
	SWPPP Content	123		N/A	Notes		

-		ı	1	1	1
2	Copy of the Construction General Permit				
3	Description & nature of project				
	, , , , , , , , , , , , , , , , , , ,				
4	Sequence & timing of land-disturbance activities				
-	Sequence & timing or land-disturbance activities				
5	Decord of dates when reciprocading outlining activities				
5	Record of dates when major grading activities occurred				
6	Record of dates when grading temporarily or				
	permanently ceased				
7	Record of dates when stabilization measures are				
	initiated				
8	Estimate of total land-disturbance area including off-site				
	areas				
9	Description of potential pollution sources (fuel, chemical				
	storage, sanitary waste facilities, etc.)				
10	Identification of nearest receiving waters that will				
10	receive discharges from the project				
	reserve disordinges from the project				
11	Location & description of industrial activity discharges				
11	covered by this permit such as dedicated asphalt &				
	concrete plants				
12					
12	Detailed site map identifying location of the project and				
	receiving waters:				
13	Site map indicating the following:				
	1. Direction of final storm flows & slopes				
			<u>l</u>		
	2. Areas of disturbed & undisturbed sites				
	3. Location of controls				
	-				
	4. Location of stabilization practices				
	Estation of Stabilization practices				
L	1	<u> </u>	1		

	I = 1	T	<u> </u>	1	
	5. Location of surface water including wetlands				
	6. Location of stormwater discharges				
	7. Location of any off-site, waste, storage, and borrow				
	areas				
	8. Location of potential pollutant sources				
	9. Areas of final stabilization		1		
	3.7.1. Cu3 Of final Stabilization				
ITEM	Controls to Minimize Pollutants	YES	NO	N/ A	Recommended Corrective Action and Notes
1	Description of control measures to be implemented to				
	minimize pollutants				
2	Identifies the contractor or subcontractor that will				
	implement and maintain each control measure				
3	Approved ESC plan: Plans may be referenced in the				
	SWPPP but need to be available at the time of inspection				
	since they are enforceable under the permit.				
4	All control measures required by the ESC plan are designed, installed and maintained in accordance with				
	good engineering practices and minimum standards of				
	the VESCL (§62.1-44.15 0 et seq.) and regulations				
	(9VAC25-840)				
5	All control measures properly selected, installed and				
	maintained in accordance with good engineering				
	practices and where applicable manufacturer				
6	specifications Reved or public roads cleaned as required				
6	Paved or public roads cleaned as required				
7	Control measures replaced or modified as soon as				
	practicable if periodic inspections or other information				
	indicated a control measure has been used				
	inappropriately or incorrectly				
8	Plans ensure existing vegetation preserved if possible &				
	all disturbed				
	nortions stabilized	-			
	portions stabilized				
9	Sediment escapes are removed at a frequency sufficient				
	to minimize offsite impacts				
10	All control managings are nearly colored installed and				
10	All control measures properly selected, installed and maintained.				
	1	1			

		1	
11	Litter exposed to stormwater is controlled from becoming a pollutant source		
12	Includes all necessary calculations describing post- construction		
	stormwater management measures to address quantity and/or quality that will be installed		
13	Post-construction stormwater management measures are designed and installed in accordance with applicable local, state and federal requirements		
14	If applicable, the following required information about participation in a Regional Stormwater Management Plan		
	a. Type of regional facility to which the site contributes		
	b. Geographic location of facility (including city/county & HUC)		
	c. Geographic location of the site (including city/county & HUC)		
	d. Number of acres treated by regional facility		
15	If applicable the following information about Nutrient Offset		
	a. Name of broker from which offsets will be acquired		
	b. Geographic location of offset generating facility (city/county & HUC)		
	c. Number of offsets to be acquired (lbs/acre/year)		
	d. Nutrient reductions to be achieved onsite (lbs/acre/year)		
16	Discharge from stormwater facilities or conveyance systems are to an adequate channel in accordance with VESCR (9VAC25-30)		
17	Description of control measures to prevent discharge of solid materials to state water		
18	Description of control measures to comply with state or local waste disposal, sanitary sewer or septic system regulations		
19	Description of construction and waste materials expected to be stored onsite with updates, including measure to minimize exposure of materials to stormwater, and for spill prevention and response		

20	Description of pollutant sources from areas other than	1			1
20	construction (dedicated asphalt or concrete plants) and				
	control measures to be used at those sites				
24					
21	Control measures implemented at the site are consistent				
	with applicable state, local and federal requirements for				
	ESC & SW management				
ITEM	Maintenance of Controls	YES	NO	N/ A	Recommended Corrective Action and Notes
1	Control measures properly maintained in effective				
	operating condition in accordance with good engineering practices and, where applicable, manufacturer specifications				
2	Maintenance performed as soon as practical on control				
	measures identified by inspections that are not				
	operating effectively				
3	If site inspections required to identify existing control				
	measures needed to be modified or if additional control				
	measures were necessary for any reason,				
	implementation was completed before the next				
	anticipated storm event. If implementation before				
	the next anticipated storm event was impracticable,				
	the situation was documented in the SWPPP and				
	alternative control measures were implemented as				
	soon as practicable				
ITEM	Inspections	YES	NO	N/A	Recommended Corrective Action and
11 2141	inspections	123		N/A	Notes
1	Name & phone of the "Qualified Personnel" conducting inspections				
2	Inspections conducted at required frequency				
3	Inspections include all areas of the site disturbed, off-site				
3	areas covered by the permit, areas used for storage that				
	are exposed to precipitation, control measures for				
	proper installation, maintenance and operation,				
	discharge locations where accessible, and				
	downstream locations where discharge locations				
	are not accessible				
4	For utility, pipeline, highway construction, representative				
•	inspections (For representative inspections, personnel				
	must inspect control measures 0.25 miles above and				
	below each point where access is allowed and				
	points must be listed in the report.)				
5	Inspection reports are part of the SWPPP				
3	mapeed on reports are part of the SWITT				
6	Inspection reports summarize the scope of the				
	inspections including corrective actions				
	(1) The location(s) of discharges of sediment or other				
	(1) The location(s) of discharges of sediment or other pollutants from the site				

(3) Location(s) of control measures that failed to operat as designed or proved inadequate for a particular location (4) Location(s) where additional control measures are needed that did not exist at the time of inspection (5) Corrective action required including any changes to the SWPPP that are necessary and implementation date				
needed that did not exist at the time of inspection (5) Corrective action required including any changes to the SWPPP that are necessary and implementation date				
the SWPPP that are necessary and implementation date				
(6) 4	es			
(6) An estimate of the amount of rainfall at the construction site (in inches) from the runoff producing storm event requiring the inspection, or if inspecting on a seven-day schedule, the amount or rainfall (in inches) since the previous inspection				
(7) Weather information and a description of any discharges occurring at the time of inspection				
Mon-Stormwater Discharges	YES	NO	N/ A	Recommended Corrective Action and Notes
Identification of allowable non-stormwater discharges and control measures for the non-stormwater discharge	ges			
a. Fire fighting controls				
b. Fire hydrant flushing				
c. Vehicle washing (no detergent)				
d. Water used for dust control				
e. Potable water source & uncontaminated flushing				
S. State Hate. Source & ansortanimated has/illig				
f. Building washing (no detergent)				
f. Building washing (no detergent) g. Pavement washwaters (no hazardous materials or				
				ĺ

	j. Foundati	on or footing drains				
	k. Unconta	minated excavation dewatering				
	l. Landscap	e irrigation				
ITEM	Total Maxii	mum Daily Loads and Impaired Waters	YES	NO	N/ A	Recommended Corrective Action and Notes
1	TMDL WLA	for the construction activity identified				
2		n of strategies and control measures ed to meet TMDL WLAs				
3	-	vaters identified as having impairments for that may be discharged from the construction				
4	for impaire	easure protective of water quality standards displayed waters identified as having impairments for that may be discharged from the on activity				
5		be impact(s) to receiving waters {Provide & description of impact(s).}				
			•			
Recom	mended Co	orrective Action <u>Deadline Date</u> :			Re-insp	pection Date:
listed o	condition(s)	d corrective action deadline date applies to currently constitute non-compliance and/ ons may be issued to the entity responsible	or corre	ective ac	tions ar	e not completed by the deadline, other
Inspec Signati					Date _	
	wledgemen site receipt:	t 			Date	
	·	Signature			_	
		Printed Name				

APPENDIX O

Construction Record Drawing Checklist for Permanent Stormwater Management Facilities (BMPs)

Construction Record Drawing Checklist for Permanent Stormwater Management Facilities (BMPs)

Record drawings are required for all components of permanent stormwater management facilities (BMPs). The record drawings shall be appropriately sealed and signed by a Professional engineer, architect, surveyor, or landscape architect registered in the Commonwealth of Virginia pursuant to Article 1 (§ 54.1-400 et seq.) of Chapter 4 of Title 54.1 of the Code of Virginia, unless waived by the VSMP Authority in conjunction with an agreement-in-lieu of stormwater management plan. The record drawings shall:

\square Be of the same sheet size; format, scale, etc. as the appr plans;	roved stormwater management
☐ Show the as-built condition of the stormwater managem to any changes from the approved drawings;	nent facility(ies) calling attention
☐ Provide details, including, but not limited to, elevations for channels, outfalls; cross-sections; structure and pipe sizes/components of the facility(ies);	
\square Show lot lines, numbers, street names, and maintenance	e access easement information;
☐ Provide a benchmark with description;	
\square Include maintenance information should also be provide	ed on the plan; and
$\hfill\Box$ Contain a Certification statement that all permanent sto have been constructed and are functioning in accordance w	-
Page 1 of 1 Construction Record Drawing Checklist for Project Name:	SWPPP Dated: Plans Dated: Submittal Number:

APPENDIX P

VSMP Project Completion Form

VSMP Project Completion Form

Project Name:	Date:				
Tax / Parcel No(s):	Date of				
VSMP/Stormwater Permit Number:	Approved Plans:				
\Box Has the project been built in conformance with the approved pexplanation.)	plans? (If no, provide a written				
\Box Have the stormwater conveyance system(s) and facility (ies), in culverts, storm sewers, channels, etc., been installed in conforma					
$\hfill\Box$ Have all storm structures and sewers been sealed/bricked and poured?	mortared and inverts been				
\square Are all the storm sewer structures and pipes/channels clean?					
\square Have the inlet and/or outlet protection(s) been installed as sho	own on the approved plans?				
\Box Have all disturbed areas been properly stabilized with a minim 100% vegetative cover over areas upstream of stormwater BMPs.	_				
☐ Has a construction record drawing for each permanent stormwater management facility been submitted to the Administrator for stormwater management facilities requiring a maintenance agreement(s)? The construction record drawing shall be appropriately sealed and signed by a professional registered in the Commonwealth of Virginia, certifying that the stormwater management facilities have been constructed in accordance with the approved plan. (This is required to release the financial guarantee.)					
Applicant's Contact Information					
Name:	Email:				
Address:	Phone:				
Administrative Use Only					
Inspection Date:	☐ Project conforms to plans				
Financial Guarantee Release Date:	☐ Project eligible for release				
Approved					

[Local Administrator]

APPENDIX Q

Post-Construction Inspection

Post-Construction Inspection Checklist

For:

Insert Project Name
Insert Project Site Location/Address
Insert City, State, Zip Code
Insert Project Site Telephone Number (if applicable)

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1 - ROOFTOP DISCONNECTION: O&M CHECKLIST

Inspection Date:	VSMP Permit No.:		
Project:			
Location:			
Date BMP was placed in Service:			
Inspector's Name:			
Owner / Owner's Representative:			
As-Built Plans available: Y / N			

Element of BMP	Potential Problem	Problem? Y/ N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Piping, Gutters, Drains and Pre-	Fluid from a different practice is being piped near pervious areas.				Prevent adjacent uses from piping through or around pervious area.	Professional	
Treatment Sumps	Sediment and debris accumulation				Correct the source of sediment and debris and remove it immediately	Owner or professional	
	Mosquito proliferation				Correct gutter flow to eliminate standing water; treat for mosquitoes, as needed	Owner or professional	
	Runoff is not entering the receiving pervious area.				Check to see if connection spout or overflow pipe is clogged. Remove the sediment.	Owner or professional	
	The downspouts remain disconnected.				Restore disconnection.	Owner or professional	
Manufactured Products	Product or component is broken or not functioning correctly.				Follow the manufacturer's maintenance recommendations, and repair or replace as needed.	Owner or professional	
Downstream Treatment	The compensatory treatment units have not been maintained.				Correct identified problems, according to the maintenance guidelines for the specific supplementary BMP.	Owner or professional	
	Stormwater discharge is ponding at point of disconnection.				Dry wells or french drains may be needed, if not already present. Clean out manually, and reconstruct or replace when no longer functioning.	Professional	
	Erosion is evident at the simple disconnection, bioretention/rain gardens, filter paths, or foundation planter.				Remove the sediment and debris build-up at the points where runoff enters the pervious area. Then re- stabilize.	Owner or professional	
	Practices to which the disconnection discharges are not functioning.				Reference that practice's checklist for instructions to fix problems.	Professional	
	Practices to which the disconnection discharges are disturbed or have been converted.				Correct identified problems and stabilize as needed.	Owner or professional	
	The receiving pervious area(s) retain dimensions as shown on plans and are in good condition.				Restore dimensions and make needed repairs.	Owner or professional	
	There is encroachment on the receiving pervious area(s) or easement by buildings or other structures.				Inform involved property owners of BMPs status; clearly mark the boundaries of the receiving pervious area, as needed.	Owner or professional (and perhaps the locality)	

2 - SHEET FLOW TO VEGETATED FILTER AREAS AND CONSERVED OPEN SPACE: 0&M CHECKLIST

Inspection Date:	VSMP Permit No.:			
Project:				
Location:				
Date BMP was placed in Service:				
Inspector's Name:				
Owner / Owner's Representative:				
As-Built Plans available: Y / N				
Facility Type: Level 1	Level 2			

Ideally, these BMP areas should be inspected annually, with the inspection conducted during the nongrowing season when it is easier to observe the flow path. Once established, vegetated filter strips have minimal maintenance needs outside of the Spring cleanup: regular mowing, repair of check dams and other measures to maintain the hydraulic efficiency of the filter strip and a dense, healthy grass cover. Grass filter strips and boundary zones must be mowed at least twice a year to prevent woody growth. A conservation easement may be required to ensure that the vegetated filter strip area and any newly established or restored forest cover may not be cleared. Also, a responsible party should ensure that routine forest improvements are made over time (i.e., thinning, invasive plant removal, etc.).

Element of BMP	Potential Problem	Problem? Y/ N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Contributing	There is excessive trash and debris.				Remove immediately.	Owner or professional	
Drainage Area	There is evidence of erosion and/or bare or exposed soil.				Stabilize immediately.	Owner or professional	
Inlet	Inlets provide stable conveyance into facility.				Stabilize immediately, as needed.	Owner or professional	
	Excessive trash / debris / sediment accumulation at the inlet				Remove trash and debris immediately.	Owner	
	Evidence of erosion at / around the inlet				Correct the source problem and stabilize immediately.	Owner or professional	
Channel	Scour and erosion are present within the vegetated filter area				Sediments are to be cleaned out of Level Spreader forebays and flow splitters	Owner or professional	
	Debris and sediment build-up is present at the top of the vegetated filter area.				Check conveyance(s) to the filter area for trouble spots and correct any problems immediately. Manually remove the deposited sediment.	Owner or professional	
Gravel Diaphragm	Foot or vehicular traffic is compromising the gravel diaphragm.				Block foot and vehicular traffic. Re-stabilize the area immediately.	Professional	
Level Spreader	The level spreader is performing properly. Flows are not concentrating on the down- gradient side of the element				Search the spreader for chips, cracks, or any other fundamental compromise of the structure. Repair immediately.	Professional	
	There is excessive landscape waste and yard clippings.				Remove immediately.	Owner or professional	
Vegetation	Vegetative density is less than 90% cover in the boundary zone or grass filter.				Reseed and fertilize (if necessary) the exposed soil.	Owner or professional	
	The plant composition is consistent with the approved plans.				Make a judgment regarding whether plants need to be replaced, and replace if necessary. Correctly destroy and/or	Professional	
	Invasive species or weeds are present				remove the invasive species; make a judgment regarding whether other weeds need to be removed, and remove if necessary.	Owner or professional	
	There is troublesome pest infestation.				Use integrated pest management (IPM) techniques to minimize the use of pesticides and herbicides. Minimize use of organic (not chemical) fertilizer, as needed.	Owner or professional	
	There is dead vegetation and/or exposed soil.				Reseed or replace dead vegetation on exposed soil Areas.	Owner or professional	

Element of BMP	Potential Problem	Problem? Y/N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Overflow Area	Flows through the filter area short-circuit the overflow control section				Check that the structure is not clogged. If so, manually clean out debris immediately.	Owner or professional	
Outlet	The outlet provides stable conveyance away from the filter area.				Stabilize immediately, as needed.	Professional	
Overall	There is adequate access to the level spreader and filter area.				Establish adequate access.	Professional	
	There is evidence of standing water.				Fill in low spots and stabilize; correct flow problems causing ponding.	Owner or professional	
	There is excessive trash and debris.				Remove immediately.	Owner or Professional	
	Mosquito proliferation				Eliminate stangant pools and establish vegetation; treat for mosquitoes as needed. If sprays are considered, then a mosquito larvicide, such as Bacillus thurendensis or Altoside formulations can be applied only if absolutely necessary.	Owner or professional	
	Complaints from local residents				Correct real problems	Owner or professional	
	Encroachment on the filter area or easement by buildings/structures				Inform involved property owners of BMPs status; clearly mark the boundaries of the receiving pervious area, as needed.	Owner or professional (and perhaps the locality)	

3 - GRASS CHANNELS: O&M CHECKLIST

Inspection Date:	VSMP Permit No.:
Project:	
Location:	
Date BMP was placed in Service:	Date of Last Inspection:
Inspector's Name:	
Owner / Owner's Representative:	
As-Built Plans available: Y / N	
Type of pretreatment facility:	
□ Sediment □ Forebay □ Dam	
□Grass □Filter □Strip	
☐Stone ☐Diaphragm	
Other:	
None:	

Ideally, these BMP areas should be inspected annually, with the inspection conducted spring when the health of the grass channel lining should be evident. Once established, Grass Channels have minimal maintenance needs outside of the Spring cleanup: regular mowing, repair of check dams and other measures to maintain the hydraulic efficiency of the channel and a dense, healthy grass cover.

Element of BMP	Potential Problem	Problem? Y/ N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Contributing Drainage Area	There is excessive trash and debris. There is evidence of				Remove immediately.	Owner or professional	
	erosion and / or bare or exposed soil.				Stabilize immediately.	Owner or professional	
Pre-treatment	There is adequate access to the pre-treatment facility.				Establish adequate access.	Professional and, perhaps, the locality	
	There is excessive trash / debris / sediment in the facility				Remove immediately.	Owner or professional	
	There is evidence of erosion and / or exposed soil.				Stabilize immediately.	Owner or professional	
	There is evidence of diaphragm or other clogging.				Identify and eliminate the source of the problem; . If necessary, remove and clean or replace the stone.	Professional	
	There is dead vegetation and evidence of erosion and / or exposed soil.				Repair erosion damage, and reseed or otherwise restabilize with vegetation.	Owner or professional	
Inlets	The inlet is not maintaining a calm flow of water entering the channel or the conveyance capacity is blocked.				Remove trash and sediment accumulated at the inflow. Sources of sediment and debris must be identified and corrected. Stone splash pads must be replenished to prevent erosion.	Owner or professional	
	There is evidence of erosion at / around Inlet.				Repair erosion damage, and reseed or otherwise restabilize with vegetation.	Owner or professional	
Vegetation	Native soil is exposed or erosion channels are forming.				If sediment deposits are thick enough to damage or kill vegetation, remove the sediment by hand, while protecting the vegetation.	Owner or Professional	
	Grass height does not reach standards				Grass channels must be mowed to keep grass at a height of 4" to 9". Remove grass clippings after mowing.	Owner or Professional	
	Vegetation requires fertilizer or pest control				Fertilize according to specifications. Use organic rather than chemical fertilizer. If feasible, use compost. Use integrated pest management (IPM) techniques to minimize the use of pesticides and herbicides.	Owner or Professional	
	The plant composition is consistent with the approved plans.				Make a judgment regarding whether plants need to be replaced, and replace if necessary	Professional	
	Invasive species or weeds are present				Correctly destroy and/or remove the invasive species; make a judgment regarding whether other weeds need to be removed, and remove if necessary.	Owner or professional	
	There is dead vegetation and/or exposed soil.				Reseed or replace dead vegetation and exposed soil areas.	Owner or professional	

Element of BMP	Potential Problem	Problem? Y/ N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Side Slopes	Evidence of erosion on side slopes, introducing sediment into the swale.				Repair erosion damage immediately. Stabilize slopes using appropriate erosion control measures and plant appropriate vegetation.	Owner or Professional	
Check Dams	Dam is not functioning properly.				Check upstream and downstream sides of check dams for evidence of undercutting, side cutting or erosion and repair immediately.	Professional	
	There is a large accumulation of sediment or trash/debris behind the check dam.				Remove sediment when the accumulation exceeds 25% of the original Tv. Remove trash/debris and clear blockages of weep holes.	Professional	
Channel Bottom	Undesirable plant species, accumulations of fallen leaves, and other debris from deciduous plant foliage are present.				Remove woody vegetation from the channel. Prune adjacent trees and shrubs to keep the channel clear. Remove/replace invasive veg. or weeds if they cover < 25% of the channel area. Remove accumulated organic matter and debris immediately.	Owner or Professional	
	Base soils are compacted. The practice does not draw down within 48 hours after a storm.				De-thatch and aerate the channel. Remove sediment when the accumulation exceeds 25% of channel volume. Restore the original cross section and revegetate the channel.	Owner or Professional	
	There is unhealthy or dead grass cover or evidence of erosion, braiding, or excessive ponding in the channel bottom.				Fill in low spots, repair erosion, and add reinforcement planting to maintain 90% turf cover. Reseed any salt killed vegetation and stabilize immediately. Keep the grass in a healthy, vigorous condition at all times, since it is the primary erosion protection for the channel.	Owner or Professional	
Channel Outlet	The outlet does not maintain sheet flow of				The source of erosion damage must be identified and controlled when native soil is exposed or erosion channels		
	The outlet provides stable conveyance out of the channel.				Stabilize immediately, as needed.	Professional	
	There is excessive trash, debris or sediment accumulation at outlet.				Check inflow points for cogging and remove any trash and sediment deposits	Owner or professional	
	There is dead vegetation and/or exposed soil.				Reseed or replace dead vegetation and exposed soil areas	Owner or professional	

Element of BMP	Potential Problem	Problem? Y/ N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Pest Control	There is evidence of standing water and mosquito habitat or rodent damage.				Pest control measures must be taken when mosquitoes and/or rodents are found to be present. If sprays are considered, then a mosquito larvicide, such as Bacillus thurendensis or Altoside formulations can be applied only if absolutely necessary. Holes in the ground located in and around the swale must be filled and stabilized with vegetation. Burrowing animals should be humanely removed from the area.	Professional	
Overall	Access to the Grass Channel is adequate				Establish adequate access	Professional and, perhaps, the locality	
	Complaints from local residents				Correct real problems	Owner or professional	
	Encroachment by buildings or other structures				Clearly mark BMP and inform those involved of the BMPs.	Owner, professional (and perhaps the locality)	

4 - SOIL COMPOST AMENDMENTS: 0&M CHECKLIST

Inspection Date:	VSMP Permit No.:
Project:	
Location:	
Date BMP was placed in Service:	Date of Last Inspection:
Inspector's Name:	
Owner / Owner's Representative:	

As-Built Plans available: Y / N

Ideally, the amended soil area should be watered once every 3 days for the first month, and then weekly during the first growing season (April-October), depending upon rainfall. The area should be inspected at least after each storm event that exceeds 1/2-inch of rainfall during the first six months following the incorporation of soil amendments. Depending on the results of a soil test for the amended area, a one-time spot fertilization may be needed in the fall after the first growing season to increase plant vigor. The area should be de-thatched every few years to increase permeability.

Element of BMP	Potential Problem	Problem? Y/ N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
	There is excessive trash and debris.				Remove immediately.	Owner or professional	
	There is evidence of erosion and / or bare or exposed soil.				Stabilize immediately with grass cover.	Owner or professional	
	Evidence of excessive use of fertilizer or lawn chemicals				Develop and implement a nutrient and pest control management plan.	Owner or professional	
	Runoff is ponding, creating rills, and/or causing erosion.				Dethatch or aerate the soil. Introduce more compost amendments and/or lime. Restabilize eroded areas by replanting vegetation.	Owner or professional	
	Access to the amended soil area for maintenance is adequate.				Establish adequate access.	Professional	
	Absence of signs designating the area as a Conservation Area				Obtain or create and post appropriate signage.	Owner (and perhaps the locality)	
	There is evidence of erosion and / or bare or exposed soil.				Stabilize immediately.	Owner or professional	
	Encroachment on the amended area or easement by buildings or other structures.				Inform involved property owners of BMPs status; clearly mark the boundaries of the receiving pervious area, as needed.	Owner or professional (and perhaps the locality)	

NOTE: Soil compost amendments do not need to be addressed in a maintenance agreement if they are incorporated to reduce lawn runoff volume or improve a residential rooftop disconnection. They probably should be addressed in a simple maintenance agreement if the soil restoration/improvement is associated with more than 10,000 square feet of reforestation. Soil compost amendments within a vegetated filter strip or grass channel should be located in a public right of way or within a dedicated stormwater or drainage easement.

5 - VEGETATED ROOFS: O&M CHECKLIST

Inspection Date:	VSMP Permit No.:		
Project:			
Location:			
Date BMP was placed in Service:			
Inspector's Name:			
Owner / Owner's Representative:			
As-Built Plans available: Y / N			
Facility Type: Level 1	Level 2		

Ideally, following construction, this practice should be inspected monthly during the vegetation establishment period, and then every six months thereafter to assess the state of vegetative cover and to look for leaks, drainage problems and other functional or structural concerns. Maintenance may include watering, hand-weeding to remove invasive or volunteer plants, and to add plant materials to repair bare areas. The use of herbicides, insecticides, fungicides, and fertilizers should be avoided, since their presence could hasten degradation of the waterproof membrane. Also, power-washing and other exterior maintenance operations should be avoided so that cleaning agents and other chemicals do not harm the vegetated roof plant communities.

Element of BMP	Potential Problem	Problem? Y/ N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Vegetation	Plant cover is less 90% plant cover.				During establishment period, replace dead plants as needed. During the long-term period, dead plants must generally be replaced once per year in the fall.	Owner or professional	
	Plants are wilting				Water more frequently to promote growth and survival. Annual application of slow-release fertilizer is recommended in the fall during the first five years following installation. After that, fertilizer is generally not necessary and should not be applied.	Owner or professional	
	Plants are choking on excess vegetation				Fallen leaves and debris from deciduous plant foliage must be removed and should be recycled or composted.	Owner or professional	
	Invasive and nuisance plant species are present				Completely remove invasive plant species. Weeding must be done by hand, without the use of herbicides or pesticides. Remove weeds regularly and do not allow them to accumulate.	Owner or professional	
	Drought conditions are present				Mulch or shade cloth may be applied to prevent excess solar damage and water loss.	Professional	
	There is troublesome pest infestation.				Use integrated pest management (IPM) techniques to minimize the use of pesticides and herbicides. Minimize use of organic (not chemical) fertilizer, as needed.	Owner or professional	
	There is excessive trash and debris.				Remove immediately.	Owner or professional	
	Grass has become unruly				Grass should be mowed as needed. Clippings must be removed and should be recycled or composted.	Owner or professional	
Vegetation Irrigation	During the establishment period (initial 1-3 years)				Water sufficiently to assure plant establishment, but do not exceed 1/4-inch of water once every 3 days.	Owner or professional	
	During the long-term period (3+ years)				Water sufficiently to maintain plant cover, but do not exceed 1/4-inch of water once every 14 days. For automatic sprinklers, use manufacturers' instructions for operation and maintenance.	Owner or professional	

Element of BMP	Potential Problem	Problem? Y/ N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Structural Components	Waterproof membrane is leaking or cracked				Make necessary repairs immediately.	Professional	
	Root barrier is perforated				Replace swatch.	Professional	
Drainage Layer/Inlet Pipes	Soil substrate, vegetation, debris, litter or other materials clog the roof drain inlet, scuppers or gutters				Sources of organic matter, debris, litter, and other sediment must be identified and materials removed to prevent clogging drainage structures.	Professional	
	Drain inlet pipe is in poor condition				Repair as needed.	Professional	
Soil Substrate/ Growing Medium	Evidence of erosion from wind or water				If erosion channels are evident, they must be stabilized with additional soil substrate/growth medium and covered with additional plants.	Professional	
	Growth media has become clogged with sediment				Manually remove sediment so as not to damage plant materials.	Professional	
Overall	Access to the vegetated roof is adequate.				Egress and ingress routes must be restored to design standards. Walkways must be clear of obstructions and maintained to design standards.	Professional	
	There is evidence of damage or vandalism.				Maintain the vegetated roof's aesthetics as an asset to the property owner and community.	Owner or professional	
	Mosquitoes or other insects are breeding/abundant at the practice				Standing water creating an environment for development of insect larvae must be eliminated manually. Chemical sprays must not be used.	Owner or professional	
	Threat of a spill is imminent.				Spill prevention measures must be exercised for mechanical systems located on roofs when substances that can contaminate stormwater are used. Releases of pollutants must be corrected as soon as they are identified.	Owner or professional	

6 - RAINWATER HARVESTING: O&M CHECKLIST

inspection every three years by a qualified third party inspector.

Inspection Date:	VSMP Permit No.:			
Project:				
Location:				
Date BMP was Placed in Service:				
Inspector's Name:				
Owner / Owner's Representative:				
As-Built Plans available: Y / N				
Ideally, this practice should be inspected each Spring and	d Fall by the owner, with an extensive			

Element of BMP	Potential Problem	Problem? Y/ N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Overall (Every third year)	A component of the system is leaking or damaged.				Make necessary repairs or replace damaged components.	Professional	
and year,	Water is flowing out of the overflow pipe during the design rainfall or smaller storm (1-1.5 inch).				Check for clogging or damage and ensure the pump is operating correctly. Ensure water is being used at the volume for which the system was designed.	Owner or professional	
	Electric system is flawed.				Make any necessary repairs/adjustments.	Professional	
	Sediment accumulation in cistern exceeds 5% of the design volume				Remove sediment.	Professional	
	Excessive overhanging vegetation/trees present				Trim branches back to meet standards	Professional	
Captured roof area (Twice a year)	Excess debris/sediment on the rooftop				Remove debris immediately.	Owner or professional	
Gutter system (Twice a year)	Gutters are clogged and water is backed up.				Unclog/remove leaves and debris. May need to install gutter screens.	Owner or professional	
	Rooftop runoff is not reaching the gutter system.				Correct the positioning or installation of gutters. May need to replace the system Do not allow sunlight to	Owner or professional	
	Algae growth				penetrate cistern. Treat the water to remove/prevent algae	Owner or professional	
	Mosquitoes are present in the cistern.				Check screens for damage and repair/ replace. Treat with mosquito dunks if necessary.	Owner or professional	
	Lids are damaged. Be sure to check vents and screens on inflow and outflow spigots and mosquito screens.				Repair immediately. Ensure that lid damage has not led to any of the aforementioned problems with the cistern.	Owner or professional	
Screens and filters (Twice a year)	Debris/sediment accumulation. Screens are clogged.				Find the source of debris and sediment and remedy. Clear the screen/filter. Replace if necessary	Professional	
Pump (Twice a year)	Not operating properly				Check for clogging. Flush if needed. May need to be replaced.	Professional	
Pre-screening devices and first flush devices (Every 3 months)	Dirty/clogged				Have a professional ensure screens have not caused bacterial growth within the gutters or downspouts. The owner may remove the clean out plug from the first flush device and manually wipe it clean.	Owner or Professional	
Backflow preventer (Every third year)	Pressure is uneven and is causing backpressure or backsiphonage.				Immediately stop use of the indoor water supplied by the tank and call a professional.	Professional	
Secondary water supply (Every third year)	Not operating properly				Consult an expert only.	Professional	

Element of BMP	Potential Problem	Problem? Y/ N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Overflow pipe (Annually)	Erosion is evident at overflow discharge point, along the filter path/secondary runoff reduction practices.				Stabilize immediately. It may be necessary to refer to inspection checklists for other BMPs.	Professional	
	Overflow pipe in poor condition				Repair or replace pipe.	Professional	

7 - PERMEABLE PAVEMENT: O&M CHECKLIST

Inspection Date:	VSMP Permit No.:
Project:	
Location:	
Date BMP was placed in Service:	Date of Last Inspection:
Inspector's Name:	
Owner / Owner's Representative:	
As-Built Plans available: Y / N	
Facility Type: Level 1	Level 2

Ideally, each permeable pavement installation should be inspected in the Spring of each year,

Post-Construction Inspection Checklist Revision Date: December 31, 2013

especially at large-scale installations.

Element of BMP	Potential Problem	Problem? Y/ N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Contributing Drainage Area	There is excessive trash and debris.				Remove immediately.	Owner or professional	
J	There is evidence of erosion and/or bare or exposed soil.				Stabilize immediately.	Owner or professional	
	There is excessive landscape waste and yard clippings.				Remove immediately.	Owner or professional	
Adjacent Vegetation	Trees and shrubs are within 5 feet of the pavement surface				Check that tree roots have not penetrated the pavement and leaf residue has not clogged the pavement. Vegetation that limits access or interferes with the permeable pavement operation must be pruned or removed.	Owner or Professional	
Inlets, Pre- Treatment Cells and	There is excessive trash, debris or sediment accumulation.				Remove immediately.	Owner or Professional	
Flow Diversion Structures	There is evidence of erosion and / or exposed soil.				Stabilize immediately.	Owner or professional	
	Evidence of clogging				Clean out sediment or debris. Remove and wash or replace stone, as needed.	Professional	
Pavement Surface	Mosquito proliferation				Eliminate standing water and establish vegetation; treat for mosquitoes as needed. If sprays are considered, then use a licensed pest controller to apply an approved mosquito larvicide (only if absolutely necessary).	Owner or professional	
Pavement Surface	There is evidence of erosion and / or bare or exposed soil in grid paver areas.				Stabilize immediately. Mow, irrigate and apply organic (not chemical) fertilizer, as needed to keep grass healthy and dense enough to provide filtering while protecting the underlying soil. Remove any grass clippings.	Owner or professional	
	There is loose material (e.g., bark, sand, etc.) stored on the pavement surface				Remove immediately and vacuum or sweep the area to prevent clogging the pavement pores.	Professional	

Element of BMP	Potential Problem	Problem? Y/N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Pavement Surface (continued)	Pavement is stained and/or clogged or water is ponded, indicating the pavement is not draining properly. Measure the drawdown rate in the observation well for three (3) days following a storm event that exceeds 1/2-inch of rain. If standing water is still observed in the well after three days, this is a clear sign that the pavement is clogged. Significant amounts of sediment have accumulated between the pavers.				The surface must be kept clean and free of leaves, debris, and sediment by vacuum sweeping (without brooms or water spray) immediately and, otherwise, at a frequency consistent with the use and loadings encountered (at a minimum, annual dryweather sweeping in the Spring). Where paving blocks are installed, the sweeper must be calibrated so it does <i>not</i> pick up the stones between the paver blocks. Following the vacuum sweeping, test pavement sections by pouring water from 5 gallon buckets, to ensure proper drainage.	Professional	
Structural Integrity	There is evidence of surface deteriortation, such as slumping, cracking, spalling or broken pavers.				Repair or replace affected areas, as necessary.	Professional	
Observation Wells	Is each observation well still capped?				Repair, as necessary.	Professional	
Outlet	Outlets are obstructed or erosion and soil exposure is evident below the outlet.				Remove obstructions and stabilize eroded or exposed areas.	Owner or Professional	

8 - INFILTRATION PRACTICES: 0&M CHECKLIST

Inspection Date:	VSMP Permit No.:
Project:	
Location:	
Date BMP was placed in Service:	Date of Last Inspection:
Inspector's Name:	
Owner / Owner's Representative:	
As-Built Plans available: Y / N	
Facility Type: Level 1	Level 2
Facility Location:	Hydraulic Configuration:
☐ Surface	☐ On-line facility
☐ Underground	☐ Off-line facility
Filtration Media:	Type of Pre-Treatment Facility:
☐ No filtration (e.g., dry well, permeable pavement, infiltration facility, etc.	☐ Sediment forebay (above ground)
□ Sand	☐ Sedimentation chamber
☐ Bioretention Soil	☐ Plunge pool
☐ Peat	☐ Stone diaphragm
☐ Other:	☐ Grass filter strip
	☐ Grass channel
	☐ Other:

Ideally, infiltration facilities should be inspected annually. Spill prevention measures should be used around infiltration facilities when handling substances that contaminate stormwater. Releases of pollutants should be corrected as soon as identified.

Element of BMP	Potential Problem	Problem? Y/ N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Contributing	There is excessive trash and debris.				Remove immediately.	Owner or professional	
Drainage Area	There is evidence of erosion and / or exposed soil.				Stabilize immediately.	Owner or professional	
	Vegetative cover is adequate				Supplement as needed.	Owner or professional	
	There are excessive landscape waste or yard clippings.				Remove immediately and recycle or compost.	Owner or professional	
Pre-Treatment Facility	There is adequate access to the pre- treatment facility.				Establish adequate access.	Professional and, perhaps, the locality	
	There is excessive trash, debris, or sediment.				Remove immediately.	Owner or professional	
	There is evidence of erosion and/or exposed soil.				Stabilize immediately.	Owner or professional	
	There is evidence of clogging (standing water, noticeable odors, water stains, algae or floating aquatic vegetation).				Identify and eliminate the source of the problem. If necessary, remove and clean or replace the clogged material.	Professional	
	There is dead vegetation or exposed soil in the grass filter.				Restabilize and revegetate as necessary.	Owner or professional	
Inlets	Inlets provide a stable conveyance into facility				Stabilize immediately, as needed.	Owner or professional	
	There is excessive trash/debris/sediment.				Remove immediately.	Owner or professional	
	There is evidence of erosion at or around the inlet.				Repair erosion damage and reseed or otherwise restabilize with vegetation.	Owner or professional	
Embankment, Flow Diversion Structures (e.g., Dikes, Berms, etc.) and Side Slopes	There is evidence of erosion or bare soil.				Identify the source of erosion damage and prevent it from recurring. Repair erosion damage and reseed or otherwise restabilize with	Owner or professional	
	There is excess sediment accumulation.				Remove immediately.	Owner or professional	
	Water is not detained in the infiltration basin.				Check for a breach in the containment structure and repair immediately.	Professional	
	Side slopes support nuisance animals.				Animal burrows must be backfilled and compacted. Burrowing animals should be humanely removed from area.	Professional	
Maintaining Facility Capacity and Proper Drainage	Look for weedy growth on the stone surface indicating sediment accumulation and potential clogging				Identify and control sources of sediment and debris. Remove sediment and debris in excess of 4" in depth every 2-5 years (or sooner if performance is affected).	Professional	

Element of BMP	Potential Problem	Problem? Y/ N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Maintaining Facility Capacity and Proper Drainage (continued)	Measure the draw-down rate of the observation well for three days following a storm event in excess of 1/2 inches in depth. If standing water is still observed after three days, this is a clear sign that clogging is a problem.				Immediately clear debris from the underdrain. Replace the underdrain if necessary. If needed, regrade and till to restore infiltration capacity (the need for this can be prevented by preventing upstream erosion and subsequent sediment transport to the facility).	Professional	
	There is excessive trash/debris.				Remove immediately.	Owner or professional	
Vegetation	Grass within the practice is overgrown.				Grass must be mowed to a height of 4"-9" and grass clippings removed (ideally recycled or composted).	Owner or professional	
	Pioneer trees are sprouting in the base of the facility.				Remove trees to prevent roots from puncturing the filter fabric, allowing sediment to enter.		
	Vegetation forms an overhead canopy that may drop leaf litter, fruit and other vegetative materials that may cause clogging.				Prune or remove vegetation as necessary.	Owner or professional	
Observation Well	Is each observation well still capped?				Repair, as necessary.	Professional	
Outlet	Outlets are obstructed or erosion and soil exposure is evident below the outlet.				Remove obstructions and stabilize eroded or exposed areas.	Owner or Professional	
	Evidence of flow bypassing facility There is excessive trash, debris, or sediment				Repair immediately Remove immediately	Professional Owner or professional	
Overflow or Emergency Spillway	The pipe or spillway is not effectively conveying excess water to an adequate receiving system.				Clear sediment and debris whenever 25% or more of the conveyance capacity is blocked. When damaged pipe is discovered, it must be repaired or replaced immediately. Identify and control sources of erosion damage. Replace or reinforce stone armament whenever only one layer of stone remains.		
Structural	Evidence of structural deterioration				Repair as necessary.	Professional	
Components	Evidence of spalling or cracking of structural components				Repair or replace, as necessary.	Professional	
	Grates are in good condition				Repair or replace, as Necessary.	Owner or professional	

Element of BMP	Potential Problem	Problem? Y/ N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Overall	Access to the Infiltration facility or its components is adequate.				Establish adequate access. Remove woody vegetation and debris that may block access. Ensure that manholes, valves and/or locks can be opened and operated.	Professional and, perhaps, the locality	
	There is evidence of standing water.				Fill in low spots and stabilize; correct flow problems causing ponding.	Owner or professional	
Overall (continued)	Mosquito proliferation				Eliminate standing water and establish vegetation; treat for mosquitoes as needed. If sprays are considered, then a mosquito larvicide, such as Bacillus thurendensis or Altoside formulations can be applied <i>only if absolutely necessary</i> .	Owner or professional	
	Complaints from local residents				Correct real problems.	Owner or professional	
	Encroachment on the infiltration area or easement by buildings or other structures				Inform involved property owners of BMPs status; clearly mark the boundaries of the receiving pervious area, as needed.	Owner or professional (and perhaps the locality)	

9 - BIORETENTION PRACTICES: O&M CHECKLIST

Inspection Date:	VSMP Permit No.:
Project:	
Location:	
Date BMP was Placed in Service:	Date of Last Inspection:
Inspector's Name:	
Owner / Owner's Representative:	
As-Built Plans available: Y / N	
Facility Type: Level 1	Level 2
Facility Location:	Hydraulic Configuration:
☐ Surface	☐ On-line facility
☐ Underground	☐ Off-line facility
Filtration Media:	Type of Pre-Treatment Facility:
☐ No filtration (e.g., dry well, permeable pavement, infiltration facility, etc.	☐ Sediment forebay (above ground)
☐ Sand	☐ Sedimentation chamber
☐ Bioretention Soil	☐ Plunge pool
☐ Peat	☐ Stone diaphragm
☐ Other:	☐ Grass filter strip
	☐ Grass channel
	☐ Other:

Ideally, Bioretention facilities should be inspected and cleaned up annually, preferably during the Spring. During the first 6 months following construction of a bioretention facility, the site should be inspected at least twice after storm events that exceed 1/2-inch of rainfall. Watering is needed once a week during the first 2 months following installation, and then as needed during the first growing season (April-October), depending upon rainfall. If vegetation needs to be replaced, one-time spot fertilization may be needed, preferably using an organic rather than a chemical fertilizer. Each facility should have a customized routine maintenance schedule addressing issues such as the following: grass mowing, weeding, trash removal, mulch raking and maintenance, erosion repair, reinforcement plantings, tree and shrub pruning, and sediment removal.

Element of BMP	Potential Problem	Problem? Y/ N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
	Adequate vegetation				Supplement as necessary.	Owner or professional	
	There is excessive trash and debris.				Remove immediately.	Owner or professional	
Contributing	There is evidence of erosion and / or bare or exposed soil.				Stabilize immediately.	Owner or professional	
Drainage Area	There are excessive landscape waste or yard clippings.				Remove immediately and recycle or compost.	Owner or professional	
	Oil, grease or other unauthorized substances are entering the facility				Identify and control the source of this pollution. It may be necessary to erect fences, signs, etc.	Owner or professional	
	There is adequate access to the pre-treatment facility.				Establish adequate access.	Professional and, perhaps, the locality	
	Excessive trash, debris, or sediment.				Remove immediately.	Owner or professional	
	There is evidence of erosion and / or exposed soil.				Stabilize immediately.	Owner or professional	
Pre-Treatment	There is dead vegetation or exposed soil in the grass filter.				Restabilize and revegetate as necessary.	Owner or professional	
	Check for sediment build-up at curb cuts, gravel diaphragms or pavement edges that prevent flow from getting into the bed, and check for bypassing.				Remove sediment and correct any other problems that block inflow.	Owner or professional	
	There is excessive trash, debris, or sediment.				Remove immediately.	Owner or professional	
	There is evidence of erosion at or around the inlet.				Repair erosion damage and reseed or otherwise restabilize with vegetation.	Owner or professional	
Inlets	Inflow is hindered by trees and/or shrubs.				Remove woody vegetation from points of inflow and directly above underdrains. (Trees and shrubs may be located closer to the perimeter.)	Owner or professional	
	There is evidence of rill or gully erosion or bare soil.				Identify the source of erosion damage and prevent it from recurring. Repair erosion damage and reseed or otherwise restabilize with vegetation.	Owner or professional	
	There is excess sediment accumulation.				Remove immediately.	Owner or professional	

Element of BMP	Potential Problem	Problem? Y/ N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
	Side slopes support nuisance animals.				Animal burrows must be backfilled and compacted. Burrowing animals should be humanely removed from the area.	Professional	
Side Slopes (Annually, after major storms)	Plant composition is consistent with the approved plans and any stakes or wires are in good condition.				Determine if existing plant materials are at least consistent with general Bioretention design criteria and replace inconsistent species.	Professional	
	There should be 75- 90% cover (mulch plus vegetation), and the mulch cover should be 2- 3 inches deep.				Supplement vegetation and mulch as needed.		
	There is evidence of hydrocarbons or other deleterious materials, resulting in unsatisfactory plant growth or mortality,				Replace contaminated mulch. If problem persists, test soils for hydrocarbons and other toxic substances. If excess levels are found, the soils, plants and mulch may all need to be replaced in accordance with the approved construction plans.	Professional	
	Invasive species or weeds make up at least 10% of the facility's vegetation				Remove invasive species and excessive weeds immediately and replace vegetation as needed.	Owner or professional	
Vegetation (monthly)	The grass is too high.				Mow within a week. Grass species should be selected that have dense cover, are relatively slow growing, and require the least mowing and chemical inputs. Grass should be from 6-10 inches high.	Owner or professional	
	Vegetation is diseased, dying or dead.				Remove and replace. Increase watering, but avoid using chemical fertilizers, unless absolutely necessary.	Professional	
	Winter-killed or salt- killed vegetation is present.				Replace with hardier species.	Owner or professional	
	The filter media is too low, too compacted, or the composition is inconsistent with design specifications				Raise the level, loosen and amend or replace the media, as needed, to be consistent with the state design criteria for Bioretention (85-88% sand 8-12% soil fines 3-5% organic matter in form of leaf compost). Other remediation options are described in the maintenance section of the state design criteria for Bioretention	Professional	
	The mulch is older than 3 years or is otherwise in poor condition				The mulch must be replaced every 2-3 years	Professional	
Filter Media (Annually)	There is evidence that chemicals, fertilizers, and/or oil/grease are present				Remove undesirable chemicals from media and facility immediately, and replace mulch or media as needed	Professional	

Element of BMP	Potential Problem	Problem? Y/ N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
	There is excessive				Remove trash and debris	_	
Filter Media	trash, debris, or sediment.				immediately. Check plant health and, without damaging plants, manually remove	Owner or professional	
(Annually) (continued)	There is evidence of concentrated flows, erosion or exposed soil.				the sediment, especially if the depth Identify the source of erosion damage and prevent it from recurring. Repair the erosion damage and reseed or otherwise restabilize with vegetation.	Professional	
	The filter bed is clogged and/or filled Inappropriately.				Redistribute the soil substrate and remove sediment within 2 weeks.	Professional	
The topsoil is in poor condition (e.g., the pH level is not 6-7, the composition is inappropriate, etc.).				Ensure a 3-inch surface depth of topsoil consistent with the state design criteria for Bioretention (loamy sand or sandy loam texture, with less than 5% clay content, and organic matter content of at least 2%). If the pH is less than 6.5, spread limestone.	Professional		
	The perforated pipe is not conveying water as designed				Determine if the pipe is clogged with debris or if woody roots have pierced the pipe. Immediately clean out or replace the pipe, as necessary.	Professional	
	The underlying soil interface is clogged (there is evidence on the surface of soil crusting, standing water, the facility does not dewater between storms, or water ponds on the surface of basin for more than 48 hours after an event).				Measure the draw-down rate of the observation well for three days following a storm event in excess of 1/2 inches in depth. After three days, if there is standing water on top but not in the underdrain, this indicates a clogged soil layer. If standing water is both on the surface and in the underdrain, then the underdrain is probably clogged. This should be promptly investigated and remediated to restore proper filtration. Grading changes may be needed or underdrain repairs made. The filter media may need to be raked, excavated and cleaned or replaced to correct the problem. Holes that are not consistent with the design and allow water to flow directly through a planter to the ground must be plugged.	Professional	
Underdrain/ Proper Drainage	The planter is unable to receive or detain stormwater prior to infiltration. Water does not drain from the reservoir within 3-4 hours of after a storm event.				Identify and correct sources of clogging. Topsoil and sand/peat layer may need to be amended with sand or replaced all together.	Owner or professional	

Element of BMP	Potential Problem	Problem? Y/ N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Underdrain/ Proper Drainage (continued)	The planter has structural deficiencies, including rot, cracks, and failure, or the planter is unable to contain the filter media or vegetation				Make needed repairs immediately.	Owner or professional	
Planters	Outlets are obstructed or erosion and soil exposure is evident below the outlet.				Remove obstructions and stabilize eroded or exposed areas.	Owner or professional	
Outlet/ Overflow Spillway	There is excessive trash, debris, or sediment at the outlet				Remove immediately, and keep the contributing area free of trash and debris.	Owner or professional	
Spinway	Any grates present are in good condition				Repair or replace as necessary	Owner or professional	
Observation Well	Is the observation well still capped?				Repair, as necessary.	Professional	
Overall	Access to the Infiltration facility or its components is adequate.				Establish adequate access. Remove woody vegetation and debris that may block access. Ensure that hardware can be opened and operated.	Professional and, perhaps, the locality	
	There is evidence of standing water.				Fill in low spots and stabilize; correct flow problems causing ponding.	Owner or professional	
	Mosquito proliferation				Eliminate stangant pools and establish vegetation; treat for mosquitoes as needed. If sprays are considered, then a mosquito larvicide, such as Bacillus thurendensis or Altoside formulations can be applied <i>only if absolutely necessary</i> .	Owner or professional	
	Complaints from local residents				Correct real problems	Owner or professional	

Element of BMP	Potential Problem	Problem? Y/ N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Overall (continued)	Encroachment on the bioretention area or easement by buildings or other structures				status ; clearly mark the boundaries of the receiving pervious area, as needed	Owner or professional (and perhaps the locality)	

10 - DRY SWALES: O&M CHECKLIST

Inspection Date:	VSMP Permit No.:		
Project:			
Location:			
Date BMP was Placed in Service:	Date of Last Inspection:		
Inspector's Name:			
Owner / Owner's Representative:			
As-Built Plans available: Y / N			
Facility Type: Level 1	Level 2		
Facility Location:	Hydraulic Configuration:		
☐ Surface	☐ On-line facility		
☐ Underground	☐ Off-line facility		
Filtration Media:	Type of Pre-Treatment Facility:		
☐ No filtration (e.g., dry well, permeable pavement,	☐ Sediment forebay (above ground)		
infiltration facility, etc.	= seament isresay (assive ground)		
□ Sand	☐ Sedimentation chamber		
☐ Bioretention Soil	☐ Plunge pool		
☐ Peat	☐ Stone diaphragm		
☐ Other:	☐ Grass filter strip		
	☐ Grass channel		
	☐ Other:		

Ideally, Dry Swales should be inspected annually in the Spring, triggering such maintenance activities as sediment removal, spot revegetation, inlet stabilization, and repairs to check dams, underdrains and outlets.

Element of BMP	Potential Problem	Problem? Y/ N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
	There is excessive trash and debris.				Remove immediately.	Owner or professional	
Contributing Drainage Area	There is evidence of erosion and / or bare or exposed soil.				Stabilize immediately.	Owner or professional	
	There are excessive landscape waste or yard clippings.				Remove immediately and recycle or compost.	Owner or professional	
	There is adequate access to the pre- treatment facility. There is excessive				Establish adequate access.	Professional and, perhaps, the locality	
	trash, debris, or sediment.				Remove immediately.	Owner or professional	
Pre-Treatment and Flow Spreaders	There is evidence of erosion and / or exposed soil.				Stabilize immediately.	Owner or professional	
	There is evidence of clogging (standing water, noticeable odors, water stains, algae or floating aquatic vegetation).				Identify and eliminate the source of the problem. If necessary, remove and clean or replace the clogged material.	Professional	
Pre-Treatment and Flow Spreaders	There is dead vegetation or exposed soil in the grass filter.				Restabilize and revegetate as necessary.	Owner or professional	
(continued)	The pea gravel diaphragm is at the correct level.				Correct the installation, as needed.	Professional	
	The inlet provides a stable conveyance into the swale.				Stabilize immediately, as needed, and clear blockages.	Owner or professional	
Inlet and Swale Sides and Base	There is excessive trash, debris, or sediment.				Remove immediately.	Owner or professional	
	There is evidence of erosion at or around the inlet.				Repair erosion damage and reseed.	Owner or professional	
	A check dam is not functioning properly.				Check upstream and downstream sides of check dams for evidence of undercutting, side cutting or erosion and repair immediately.	Professional	
Check Dams	There is a large accumulation of sediment or trash/debris behind the				Remove sediment when the accumulation exceeds 25% of the original Tv. Remove trash/debris	Professional	
Vegetation	check dam. Invasive species or weeds make up at least 10% of the facility's vegetation Trees form an				and clear blockages of weep holes. Remove invasive species and excessive weeds immediately and replace vegetation as needed.	Owner or professional	
	overhead canopy that may drop leaf litter, fruit and other vegetative materials that may cause clogging.				Prune or remove vegetation and organic litter as necessary.	Owner or professional	

Element of BMP	Potential Problem	Problem? Y/N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Vegetation (continued)	Grass height is not consistent with standards.				Dry Swales must be mowed to keep grass at a height of 4" to 9". Remove grass clippings after mowing. Increase watering and reseed, if necessary, to maintain 95% turf cover, but avoid using	Owner or professional	
	The grass cover is not dense enough or is dead or dying.				chemical fertilizers unless absolutely necessary. Replace salt- killed vegetation with salt- tolerant species.	Professional	
Filter Media/ Soil	There is evidence that chemicals, fertilizers, and/or oil are present.				Remove undesirable chemicals from media and facility immediately, and replace mulch or media as needed.	Professional	
	There is excessive trash, debris, or sediment.				Remove trash and debris immediately. Check plant health and, without damaging plants, manually remove the sediment, especially if the depth exceeds 20% of the facility's	Owner or professional	
Filter Media/ Soil (continued)	There is evidence of erosion and / or exposed soil.				design depth. Stabilize immediately.	Owner or professional	
	There is evidence that chemicals, fertilizers, and/or oil are present.				Remove undesirable chemicals from media immediately, and replace mulch or media as needed. Determine if the pipe is clogged with debris or if woody	Professional	
	The perforated pipe is not conveying water as designed.				roots have pierced the pipe. Immediately clean out or replace the pipe, as necessary.	Professional	
Underdrain	The underlying soil interface is clogged (there is evidence on the surface of soil				Measure the draw-down rate of the observation well for three days following a storm event in excess of 1/2 inches in depth. After three days, if there is standing water on		
	crusting, standing water, the facility does not dewater between storms, or water ponds on the surface of basin for more than 48 hours after an event).				top but not in the underdrain, this indicates a clogged soil layer. If standing water is both on the surface and in the underdrain, then the underdrain is probably clogged. This should be promptly investigated and remediated to restore proper filtration. Grading changes may be needed or underdrain repairs made.	Professional	
Outlet	Outlets are obstructed or erosion and soil exposure is evident below the outlet. There is excessive				Remove obstructions and stabilize eroded or exposed areas. Remove immediately, and	Owner or Professional Owner or	
	trash, debris, or sediment at the outlet.				keep the contributing area free of trash and debris.	professional	

Element of BMP	Potential Problem	Problem? Y/ N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Overall	Access to the Infiltration facility or its components is adequate.				Establish adequate access. Remove woody vegetation and debris that may block access. Ensure that hardware can be opened and operated.	Professional and, perhaps, the locality	
	Mosquito proliferation				Eliminate stangant pools and establish vegetation; treat for mosquitoes as needed. If sprays are considered, then a mosquito larvicide, such as Bacillus thurendensis or Altoside formulations can be applied only if absolutely necessary.	Owner or professional	
	Complaints from local residents				Correct real problems.	Owner or professional	
	Encroachment on the swale or easement by buildings or other structures				Inform involved property owners of BMPs status; clearly mark the boundaries of the receiving pervious area, as needed.	Owner or professional (and perhaps the locality)	

11 - WET SWALES: O&M CHECKLIST

Wet Swales have maintenance needs similar to Dry Swales, although woody wetland vegetation may need to be removed periodically.

Element of BMP	Potential Problem	Problem? Y/ N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
	There is excessive trash and debris.				Remove immediately.	Owner or professional	
Contributing Drainage Area	There is evidence of erosion and / or bare or exposed soil.				Stabilize immediately.	Owner or professional	
	There are excessive landscape waste or yard clippings.				Remove immediately and recycle or compost.	Owner or professional	
	There is adequate access to the pre-treatment facility				Establish adequate access.	Professional and, perhaps, the locality	
	There is excessive trash, debris, or sediment.				Remove immediately.	Owner or professional	
Pre-Treatment	There is evidence of erosion and / or exposed soil.				Stabilize immediately.	Owner or professional	
	There is evidence of clogging (standing water, noticeable odors, water stains, algae or floating aquatic vegetation).				Identify and eliminate the source of the problem. If necessary, remove and clean or replace the clogged material.	Professional	
Pre-Treatment	There is dead				Replace dead vegetation as	Professional	
(continued)	vegetation. The inlet provides a stable conveyance into the swale. There is excessive				necessary. Stabilize immediately, as needed, and clear blockages.	Owner or professional	
Inlets	trash, debris, or sediment.				Remove immediately.	Owner or professional	
	There is evidence of erosion at or around the inlet.				Repair erosion damage and reseed.	Owner or professional	
Check Dams	A check dam is not functioning properly.				Check upstream and downstream sides of check dams for evidence of undercutting, side cutting or erosion and repair immediately.	Professional	
	There is a large accumulation of sediment or trash/debris behind the check dam.				Remove sediment when the accumulation exceeds 25% of the original Tv. Remove trash/debris and clear blockages of weep holes.	Professional	
	Plant composition is consistent with the approved plans.				Replace inconsistent species.	Professional	
Vegetation (monthly)	Invasive species (e.g., phragmites) are present.			_	Remove invasive species immediately and replace vegetation as needed.	Professional	
	Vegetation is dead or dying.				Replace dead vegetation as needed.	Professional	
Outlet	Outlets are obstructed or erosion and soil exposure is evident below the outlet.				Remove obstructions and stabilize eroded or exposed areas.	Owner or Professional	
	There is excessive trash, debris, or sediment at the outlet.				Remove immediately, and keep the contributing area free of trash and debris.	Owner or professional	

Element of BMP	Potential Problem	Problem? Y/ N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
	Access to the Infiltration facility or its components is adequate.				Establish adequate access. Remove woody vegetation and debris that may block access. Ensure that hardware can be opened and operated.	Professional and, perhaps, the locality	
Overall	Mosquito proliferation				Eliminate stagnant pools if feasible, and treat for mosquitoes as needed. If sprays are considered, then a mosquito larvicide, such as Bacillus thurendensis or Altoside formulations can be applied <i>only if absolutely necessary</i> .	Owner or professional	
	Complaints from local residents				Correct real problems.	Owner or professional	
	Encroachment on the swale or easement by buildings or other structures				Inform involved property owners of BMPs status; clearly mark the boundaries of the receiving pervious area, as needed.	Owner or professional (and perhaps the locality)	

12 - FILTERING PRACTICES: O&M CHECKLIST

Inspection Date:	VSMP Permit No.:				
Project:					
Location:					
Date BMP was Placed in Service:	Date of Last Inspection:				
Inspector's Name:					
Owner / Owner's Representative:					
As-Built Plans available: Y / N					
Facility Type: Level 1	Level 2				
Facility Location:	Hydraulic Configuration:				
☐ Surface	☐ On-line facility				
☐ Underground	☐ Off-line facility				
Filtration Media:	Type of Pre-Treatment Facility:				
☐ No filtration (e.g., dry well, permeable pavement, infiltration facility, etc.	☐ Sediment forebay (above ground)				
☐ Sand	☐ Sedimentation chamber				
☐ Bioretention Soil	☐ Plunge pool				
□ Peat	☐ Stone diaphragm				
☐ Other:	☐ Grass filter strip				
	☐ Grass channel				
	☐ Other:				
	<u> </u>				

An inspection and clean-up should be scheduled annually to remove trash and floatables that accumulate in the pre-treatment cells and filter bed. Frequent sediment cleanouts in the dry and wet sedimentation chambers are recommended every 2-3 years to maintain the function and performance of the filter. If the filter treats runoff from a hotspot, crews may need to test the filter bed media before disposing of the media and trapped pollutants. If the filter does not treat runoff from a hotspot, the media can be safely disposed by either land application or land filling, without prior testing.

Warning: If the filtering facility has a watertight cover; be careful regarding the possibility of flammable gases within the facility. Care should be taken lighting a match or smoking while inspecting facilities that are not vented. If the filtering facility is in a completely enclosed vault, the **OSHA Confined Space Entry** procedures must be followed.

Element of BMP	Potential Problem	Problem? Y/ N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
	Adequate vegetation				Supplement as necessary.	Owner	
Contributing	There is excessive trash and debris.				Remove immediately.	Owner or professional	
Drainage Area and Side Slopes	There is evidence of erosion and / or bare or exposed soil.				Stabilize immediately.	Owner or professional	
	There are excessive landscape waste or yard clippings.				Remove immediately and recycle or compost.	Owner or professional	
Pre-Treatment	There is adequate access to the pre-treatment facility.				Establish adequate access.	Professional and, perhaps, the locality	
	Excessive trash, debris, or sediment.				Remove immediately.	Owner or professional	
	There is evidence of erosion and / or exposed soil.				Stabilize immediately.	Owner or professional	
	There is dead vegetation.				Replace dead vegetation as necessary	Professional	
Pre-Treatment (continued)	Perimeter turf (or a grass filter strip) is too high.				Mow at least 4 times a year to keep the grass at a height of 4" to 9". Remove grass clippings after mowing.	Owner or professional	
	There is evidence of oil, grease, clogging (standing water, noticeable odors, water stains, algae).				Identify and eliminate the source of the problem. If necessary, remove and clean or replace the clogged material.	Professional	
	The inlet provides a stable conveyance into the swale.				Stabilize immediately, as needed, and clear blockages.	Owner or professional	
Inlets	There is excessive trash, debris, or sediment.				Remove immediately.	Owner or professional	
	There is evidence of erosion at or around the inlet.				Repair erosion damage and reseed.	Owner or professional	
Sedimentation Chambers	Sediment or debris accumulations are excessive				Clean out the wet and dry sedimentation chambers.	Professional	
Filter Media	If facility takes longer than 48 hours to drain or filter media is discolored, the media is probably clogged.				Replace the top sand layer of an enclosed filter (typically done every 5 years). Till or aerate the surface to improve infiltration and grass cover of an open filter (also typically done every 5 years).		
Oil and Grease	Evidence of filter surface clogging				Clean or replace filter media, as necessary.	Professional	

Element of BMP	Potential Problem	Problem? Y/N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Underdrain	The underdrain is not conveying water as designed.				To determine if the pipe is clogged, measure the drawdown rate of the observation well for three days following a storm event in excess of 1/2 inches in depth. After three days, if there is standing water on top but not in the underdrain, this indicates a clogged sand layer that must be replaced. If standing water is both on the surface and in the underdrain, then the underdrain is probably clogged. Immediately clean out the pipe manually or, if needed, use a high-pressure hose. Replace theunderdrain if it is structurally damaged.	Professional	
Observation Well (every 2 years)	Is the observation well still capped?				Repair, as necessary.	Professional	
	The outlet provides				Remove blockages and	Professional	
	stable conveyance. Evidence of flow				stabilize, as needed.	Toressional	
Outlet	bypassing facility				Repair immediately.	Professional	
outier	Outlets are obstructed or erosion and soil exposure is evident below the outlet.				Remove obstructions and stabilize eroded or exposed areas.	Owner or Professional	
	Evidence of structural deterioration				Repair as necessary.	Professional	
Structural Components	Evidence of spalling or cracking of structural components				Repair or replace, as necessary.	Professional	
	Grates are in good condition				Repair or replace, as Necessary.	Owner or professional	
	Catalog cuts and wiring diagram for pump available.				If missing, obtain replacements.	Owner	
Pump (where	Waterproof conduits for wiring appear to be intact				Repair as necessary.	Professional	
applicable)	Panel box is well marked.				If not, mark it correctly.	Professional	
	No evidence of pump failure (excess water in pump well, etc.)				Repair as necessary.	Professional	
Overall	Access to the facility or its components is adequate.				Establish adequate access. Remove woody vegetation and debris that may block access. Ensure that hardware can be opened and operated.	Professional and, perhaps, the locality	
	Condition of hydraulic control components				Repair, as necessary.	Professional	
	Complaints from local residents				Correct real problems.	Owner or professional	
	Noticeable odors outside facility				Determine source and eliminate it.	Professional	

Element of BMP	Potential Problem	Problem? Y/ N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Overall (continued)	Mosquito proliferation				Eliminate stagnant pools if feasible, and treat for mosquitoes as needed. If sprays are considered, then a mosquito larvicide, such as Bacillus thurendensis or Altoside formulations can be applied only if absolutely necessary.	Owner or professional	
	Encroachment on the filter or easement by buildings or other structures.				Inform involved property owners of BMPs status; clearly mark the boundaries of the receiving pervious area, as needed.	Owner or professional (and perhaps the locality)	

13 - CONSTRUCTED WETLANDS: O&M CHECKLIST

Inspection Date:	VSMP Permit No.:	
Project:		
Location:		
Date BMP was Placed in Service:	Date of Last Inspection:	
Inspector's Name:		
Owner / Owner's Representative:		
As-Built Plans available: Y / N		
Facility Type: Level 1	Level 2	
Hydraulic Configuration:	Type of Pre-Treatment Facility:	
\square On-line facility	☐ Sediment forebay (above ground)	
☐ Off-line facility		
	☐ Grass filter strip	
Type of wetland:	☐ Grass channel	
☐ Emergent Forested	□ Other:	

During the first 6 months following construction, the wetland should be inspected twice after storm events that exceed 1/2 inch of rainfall. Bare or eroding areas should be stabilized immediately with grass cover. Trees planted in the buffer and on wetland islands and peninsulas need to be watered every 3 days for the first month, and then weekly during the remainder of the first growing season (April-October), depending on rainfall. Due to typical vegetation survival problems, it is typical to plan and budget for a round of reinforcement planting after one or two growing seasons. Constructed wetlands should be inspected and cleaned up annually. A wetland professional should inspect the facility every 5 years, especially to determine if there is any significant negative change in the wetland species composition from the design or an otherwise healthy wetland.

Element of BMP	Potential Problem	Problem? Y/ N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
	Adequate vegetation				Supplement as needed.	Owner	
	There is excessive trash and debris.				Remove immediately.	Owner or professional	
Contributing Drainage Area	There is evidence of erosion and/or bare or exposed soil.				Stabilize immediately.	Owner or professional	
	There are excessive landscape waste and yard clippings.				Remove immediately and recycle or compost.	Owner or professional	
	There is adequate access to the pre-treatment facility.				Establish adequate access.	Professional and, perhaps, the locality	
	There is excessive trash and debris				Remove immediately.	Owner or professional	
Pre-Treatment erosion and/or expsoil. Sediment deposits	There is evidence of erosion and/or exposed soil.				Immediately identify and correct the cause of the erosion and stabilize the eroded or bare area.	Owner or professional	
	Sediment deposits are 50% or more of forebay capacity.				Dredge the sediment to restore the design capacity; sediment should be dredged from forebays at least every 5 years.	Professional	
Pre-Treatment	The sediment marker is not vertical.				Adjust the sediment depth marker to a vertical alignment.	Professional	
(continued)	There is dead vegetation.				Revegetate, as needed.	Owner or professional	
	The inlet provides a stable conveyance.				Stabilize immediately, as needed; clear blockages.	Owner or professional	
	There is excessive trash, debris, or sediment.				Remove immediately.	Owner or professional	
	There is evidence of erosion/undercutting at or around the inlet.				Repair erosion damage and reseed.	Owner or professional	
Inlets	There is cracking, bulging, erosion or sloughing of the forebay dam.				Repair and restabilize immediately.	Professional	
Th gro da Th	There is woody growth on the forebay dam.				Remove within 2 weeks of discovery.	Professional	
	There is evidence of nuisance animals.				Animal burrows must be backfilled and compacted. Burrowing animals should be humanely removed from area.	Professional	
Vegetation (trees, shrubs, aquatic plants)	Plant composition is consistent with the approved plans.				Determine if existing plant materials are at least consistent with the general Constructed Wetland design criteria, and replace inconsistent species.	Professional	

Element of BMP	Potential Problem	Problem? Y/ N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Vegetation (trees, shrubs, aquatic plants) (continued)	Invasive species are present.				Remove invasive species immediately and replace vegetation as needed. As a general rule, control of undesirable invasive species (e.g., cattail and Phragmites) should commence when their coverage exceeds more than 15% of a wetland cell area. Although the application of herbicides is not recommended, some types, such as Glyphosate, have been used to control cattails with some success. Extended periods of dewatering may also work, since early manual removal provides only short-term relief from invasive species.	Professional	
	Vegetation is dead or reinforcement planting is needed. Trees planted in the buffer and on wetland				Remove and replace dead or dying vegetation. Consider watering every 3 days for first month, and then weekly	Professional Owner or	
	islands and peninsulas need watering during the first growing season.				during first year (April – October), depending on rainfall.	professional	
Vegetation (trees, shrubs, aquatic plants) (continued)	Practice has become overgrown and is not developing into a mature wetland.				Harvest vegetation periodically if the wetland becomes overgrown or to guide maturing of forested wetlands (typically 5 and 10 years after constr.).	Owner or professional	
	Sediment accumulation is 50% or more of capacity.				Dredge the sediment to restore the design capacity.	Professional	
Wetland Cells and	There is evidence of floating debris, sparse vegetative cover, erosion or slumping of side slopes.				Remove debris. Repair and stabilize.	Owner or professional	
Pools	Open water is becoming overgrown.				Harvest the unwanted vegetation. Animal burrows must be	Professional	
	There is evidence of nuisance animals.				backfilled and compacted. Burrowing animals should be humanely removed from the area.		
	There is adequate access to riser for maintenance.				Establish adequate access.	Professional and, perhaps, the locality	
Riser/Principle Spillway and Low- Flow Orifice(s)	Pieces of the riser are deteriorating, misaligned, broken or missing.				Repair immediately.	Professional	
	Adjustable control valves are accessible and operational.				Repair, as needed.	Professional	
	Reverse-slope pipes and flashboard risers are in good condition.				Repair, as needed.	Professional	

Element of BMP	Potential Problem	Problem? Y/ N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Riser/Principle Spillway and Low- Flow Orifice(s) (continued)	There is excessive trash, debris, or other obstructions in the trash rack.				Remove immediately.	Owner or professional	
(continued)	Seepage into conduit				Seal the conduit.	Professional	
	There is sparse veg. cover, settlement, cracking, bulging, misalignment, erosion rills deeper than 2 inches, or sloughing of the dam.				Repair and restabilize immediately.	Professional	
Berm/Dam/ Embankment and	There are soft spots, boggy areas, seepage or sinkholes present.				Reinforce, fill and stabilize immediately.	Professional	
Abutments	There is evidence of nuisance animals.				Animal burrows must be backfilled and compacted. Burrowing animals should be humanely removed frm area.	Professional	
There is woody vegetation on the embankment.	vegetation on the				Removal of woody species near or on the embankment and maintenance access areas should be done when discovered, but at least every 2 years.		
	There is woody growth on the spillway.				Removal of woody species near or on the emergency spillway should be done when discovered, but at least every 2 years.	Owner or professional	
Emergency Spillway	There is excessive trash, debris, or other obstructions.				Remove immediately.	Owner or professional	
	There is evidence of erosion/back-cutting. There are soft spots,				Repair erosion damage and reseed.	Owner or professional	
	seepage or sinkholes.				Reinforce, fill and stabilize immediately.	Owner or professional	
	The outlet provides stable conveyance from the wetland.				Stabilize as needed.	Professional	
	There are excessive sediment deposits. Released water is				Remove sediment.	Professional	
Outlet	causing undercutting, erosion or displaced rip- rap at or around the outlet.				Repair, reinforce or replace rip rap as needed, and restabilize.	Professional	
	Woody growth within 5 feet of the outlet pipe barrel.				Prune vegetation back to leave a clear discharge area.	Owner or Professional	
There is exc trash, debri	There is excessive trash, debris, or other obstructions.				Remove immediately.	Owner or professional	
Overall	Access to the facility or its components is adequate.				Establish adequate access. Remove woody vegetation and debris that may block access. Ensure that hardware can be opened and operated.	Professional and, perhaps, the locality	
	Water levels in one or more cells are abnormally high or low.				Clear blockages of the riser or orifice(s) and make other adjustments needed to meet the approved design specifications.	Professional	

Element of BMP	Potential Problem	Problem? Y/ N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
	Complaints from local residents				Correct real problems.	Owner or professional	
Overall (continued)	Mosquito proliferation				Eliminate stagnant pools if feasible, and treat for mosquitoes as needed. If sprays are considered, then a mosquito larvicide, such as Bacillus thurendensis or Altoside formulations can be applied <i>only if absolutely necessary</i> . Can also stock the basin with mosquito fish to provide natural mosquito & midge control.	Owner or professional	
	Encroachment on the wetland or easement by buildings or other structures.				Inform involved property owners of BMPs status; clearly mark the boundaries of the receiving pervious area, as needed	Owner or professional (and perhaps the locality)	
	Safety signage is not adequate.				Provide sufficient, legible safety signage.	Owner or professional	

14 - WET PONDS: O&M CHECKLIST

Inspection Date:	VSMP Permit No.:
Project:	
Location:	
Date BMP was placed in Service:	Date of Last Inspection:
Inspector's Name:	
Owner / Owner's Representative:	
As-Built Plans available: Y / N	
Facility Type: Level 1	Level 2
Pond characteristics and functions (check all that apply) Water quality treatment Extended detention included	Hydraulic Configuration: ☐ On-line facility ☐ Off-line facility
☐ Channel protection ☐ Ties into groundwater ☐ Single cell pond	Type of Pre-Treatment Facility: ☐ Sediment forebay (above ground) ☐ Vegetated buffer area
☐ Multiple-cell pond system☐ Pond with one or more wetland cells	☐ Grass filter strip☐ Grass channel☐ Other:

During the first 6 months following construction, the pond should be inspected twice after storm events that exceed 1/2 inch of rainfall. The aquatic benches should be planted with emergent wetland species, consistent with the Wet Pond design specifications. Bare or eroding areas around the pond buffer should be stabilized immediately with grass cover. Trees planted in the buffer need to be watered every 3 days for the first month, and then weekly during the remainder of the first growing season (April-October), depending on rainfall. Due to typical vegetation survival problems, it is typical to plan and budget for a round of reinforcement planting during the second growing season after construction. Wet Ponds should be inspected and cleaned up annually.

Element of BMP	Potential Problem	Problem? Y/ N	Investigate? Y/N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
	Adequate vegetation				Supplement as needed	Owner	
	There is excessive trash and debris.				Remove immediately.	Owner or professional	
Contributing Drainage Area	There is evidence of erosion and/or bare or exposed soil.				Stabilize immediately.	Owner or professional	
	There are excessive landscape waste and yard clippings.				Remove immediately and recycle or compost.	Owner or professional	
	There is adequate access to the pre-treatment facility. There is excessive				Establish adequate access.	Professional and, perhaps, the locality Owner or	
Pre-Treatment	trash and debris.				Remove immediately.	professional	
	There is evidence of erosion and/or exposed soil.				Immediately identify and correct the cause of the erosion and stabilize the eroded or bare area.	Owner or professional	
5	Sediment deposits are 50% or more of forebay capacity.				Dredge the sediment to restore the design capacity; sediment should be dredged from forebays at least every 5-7 years, and earlier if performance is being affected.	Professional	
Pre-Treatment (continued)	The sediment marker is not vertical.				Adjust the sediment depth marker to a vertical alignment	Professional	
	There is evidence of clogging.				Clear blockages of the riser or orifice(s) and make other adjustments needed to meet the approved design specifications.	Professional	
	There is dead vegetation.				Revegetate, as needed.	Owner or professional	
	The inlet provides a stable conveyance into the pond.				Stabilize immediately, as needed, and clear blockages.	Owner or professional	
	There is excessive trash, debris, or sediment.				Remove immediately.	Owner or professional	
	There is evidence of erosion/undercutting at or around the inlet				Repair erosion damage and restabilize.	Owner or professional	
Inlet	There is cracking, bulging, erosion or sloughing of the forebay dam.				Repair and restabilize immediately.	Professional	
	There is woody growth on the forebay dam.				Remove within 2 weeks of discovery.	Professional	
	There is evidence of nuisance animals.				Animal burrows must be backfilled and compacted. Burrowing animals should be humanely removed from the area.	Professional	
	There is more than 1 inch of settlement.				Add fill material and compact the soil to the design grade	Owner or Professional	
	The inlet alignment is incorrect.				Correct immediately.	Owner or Professional	

Element of BMP	Potential Problem	Problem? Y/ N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
	Plant composition is consistent with the approved plans.				Determine if existing plant materials are consistent with the general Wet Pond design criteria, and replace inconsistent species.	Professional	
	Invasive species are present.				Remove invasive species immediately and replace vegetation as needed.	Professional	
Vegetation	Trees planted in the buffer and on wetland islands and peninsulas need watering during the first growing season.				Consider watering every 3 days for first month, and then weekly during first year (April – October), depending on rainfall.	Owner or professional	
	Grass around the facility is overgrown.				Mow (at least twice a year) to a height of 4"-9" high and remove grass clippings.	Owner or professional	
Vegetation (continued)	Vegetation is dead or reinforcement planting is needed.				Remove and replace dead or dying vegetation.	Professional	
	There is excessive trash and/or debris.				Remove immediately	Owner or professional	
Downson to be all and	There is evidence of sparse vegetative cover, erosion or slumping side slopes.				Repair and stabilize physical damage, and reseed or plant additional vegetation.	Owner or professional	
Permanent Pool and Side Slopes	There is evidence of nuisance animals.				Animal burrows must be backfilled and compacted. Remove burrowing animals humanely from the area.		
	There is significant sediment accumulation.				Conduct a bathymetric study to determine the impact to design volumes, and dredge if necessary.	Professional	
	There is adequate access to the riser for maintenance.				Establish adequate access	Professional and, perhaps, the locality	
	Pieces of the riser are deteriorating, misaligned, broken or missing.				Repair immediately.	Professional	
Riser/Principle	Adjustable control valves are accessible and operational.				Repair, as needed.	Professional	
Spillway and Low- Flow Orifice(s)	Reverse-slope pipes and flashboard risers are in good condition.				Repair, as needed.	Professional	
There is evi clogging.	There is evidence of clogging.				Clear blockages of the riser or orifice(s) and make other adjustments needed to meet the approved design specs.	Professional	
	Seepage into conduit				Seal the conduit	Professional	
	There is excessive trash, debris, or other obstructions in the trash rack.				Remove immediately.	Owner or professional	
Dam/ Embankment and Abutments Dam/ Embankment	There is sparse veg. cover, settlement, cracking, bulging, misalignment, erosion rills deeper than 2 inches, or sloughing of the dam.				Repair and restabilize immediately, especially after major storms.	Professional	
and Abutments (continued)	There are soft spots, seepage, boggy areas or sinkholes present.				Reinforce, fill and stabilize immediately.		

Element of BMP	Potential Problem	Problem? Y/ N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Dam/ Embankment	There is evidence of nuisance animals.				Animal burrows must be backfilled and compacted. Burrowing animals should be humanely removed from area.		
(continued)	There is woody vegetation on the embankment.				Removal of woody species near or on the embankment and maintenance access areas should be done when discovered, but at least every 2 years.		
	There is woody growth on the spillway.				Removal of woody species near or on the emergency spillway should be done when discovered, but at least every 2 years.	Owner or professional	
Overflow/ Emergency	There is excessive trash, debris, or other obstructions.				Remove immediately.	Owner or professional	
Spillway	There is evidence of erosion/backcutting There are soft spots,				Repair erosion damage and Reseed. Reinforce, fill and stabilize	Owner or professional Owner or	
seepage or sinkholes. Only one layer of stone armoring exists above the native soil.				immediately. Reinforce rip-rap or other armoring materials.	professional Professional		
	The outlet provides a stable conveyance from the pond.				Stabilize immediately, as needed, and clear blockages.	Owner or professional	
	There is woody growth within 5 feet of the outlet pipe barrel. There is excessive trash,				Prune vegetation back to leave a clear discharge area.	Owner or Professional	
Outlet	debris, or other obstructions. There are excessive				Remove immediately.	Owner or professional	
	sediment deposits at the outlet. Discharge is causing				Remove sediment.	Professional	
	undercutting, erosion or displaced rip-rap at or around the outlet.				Repair, reinforce or replace rip rap as needed, and restabilize.	Professional	
Overall	Access to the facility or its components is adequate.				Establish adequate access. Remove woody vegetation and debris that may block access. Ensure that hardware can be opened and operated.	Professional and, perhaps, the locality	
Fences are inadequate					Collapsed fences must be restored to an upright position. Jagged edges and damaged fences must be repaired or replaced.	Professional	
	Water levels in one or more cells are abnormally high or low.				Clear blockages of the riser or orifice(s) and make other adjustments needed to meet the approved design specifications.	Professional	
	Complaints from local residents				Correct real problems.	Owner or professional	

Element of BMP	Potential Problem	Problem? Y/ N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Overall (continued)	Mosquito proliferation				Eliminate stagnant pools and stock the basin with mosquito fish to provide natural mosquito & midge control. Treat for mosquitoes as needed. If spraying, then use mosquito larvicide, (e.g., Bacillus thurendensis or Altoside formulations) only if absolutely necessary.	Owner or professional	
	Encroachment on the pond or easement by buildings or other structures				Inform involved property owners of BMPs status ; clearly mark the boundaries of the receiving pervious area, as needed	Owner or professional (and perhaps the locality)	
	Safety signage is not adequate.				Provide sufficient, legible safety signage.	Owner or professional	

15 - EXTENDED DETENTION PONDS: 0&M CHECKLIST

Inspection Date:	VSMP Permit No.:
Project:	
Location:	
Date BMP was placed in Service:	Date of Last Inspection:
Inspector's Name:	
Owner / Owner's Representative:	
As-Built Plans available: Y / N	
Facility Type: Level 1	Level 2
Pond characteristics and functions (check all that apply) Water quality treatment Channel protection Ties into groundwater	Type of Pre-Treatment Facility: ☐ Sediment forebay (above ground) ☐ Vegetated buffer area ☐ Grass filter strip ☐ Grass channel ☐ Other:
Hydraulic Configuration: ☐ On-line facility ☐ Off-line facility	

Ideally, Extended Detention Ponds should be inspected annually. ED Ponds are prone to a high clogging risk at the ED low-flow orifice. Ideally, the orifice should be inspected at least twice a year after initial construction. The constantly changing water levels in ED Ponds make it difficult to mow or manage vegetative growth. The bottom of ED Ponds often become soggy, and water-loving tees such as willows may invade and will need to be managed. Periodic mowing of the stormwater buffer is required only along maintenance rights-of-way and the embankment. The remaining buffer may be managed as a meadow (mowing every other year) or forest. Frequent removal of sediment from the forebay (every 5-7 years, or when 50% of the forebay capacity is filled) is essential to maintain the function and performance of the ED Pond. Sediments excavated from ED Ponds are usually not considered toxic or hazardous, so they can be safely disposed of either by land application of land filling.

Element of BMP	Potential Problem	Problem? Y/ N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
	Adequate vegetation				Supplement as needed.	Owner	
	There is excessive trash and debris.				Remove immediately.	Owner or	
Contributing Drainage Area	There is evidence of erosion and/or bare or exposed soil.				Stabilize immediately.	professional Owner or professional	
	There is excessive landscape waste and yard clippings.				Remove immediately.	Owner or professional	
	There is adequate access to the pre-treatment facility.				Establish adequate access.	Professional and, perhaps, the locality	
Pre-Treatment	There is excessive trash and debris.				Remove immediately.	Owner or professional	
Pre-Treatment	There is evidence of erosion and/or exposed soil.				Immediately identify and correct the cause of the erosion and stabilize the eroded or bare area.	Owner or professional	
Pre-Treatment (continued)	Sediment deposits are 50% or more of forebay capacity.				Dredge the sediment to restore the design capacity; sediment should be dredged from forebays at least every 5-7 years, and earlier, as needed.	Professional	
	The sediment marker is not vertical.				Adjust the sediment depth marker to a vertical Alignment.	Professional	
	There is evidence of clogging.				Clear blockages of the riser or orifice(s) and make other adjustments needed to meet the approved design specifications	Professional	
	There is dead Vegetation.				Revegetate, as needed.	Owner or professional	
Inlet	The inlet provides a stable conveyance into the pond.				Stabilize immediately, as needed, and clear blockages.	Owner or professional	
	There is excessive trash, debris, or sediment.				Remove immediately.	Owner or professional	
	There is evidence of erosion/undercutting at or around the inlet				Repair erosion damage and restabilize.	Owner or professional	
	There is cracking, bulging, erosion or sloughing of the forebay dam.				Repair and restabilize immediately.	Professional	
	There is woody growth on the forebay dam.				Remove within 2 weeks of discovery.	Professional	
	There is evidence of nuisance animals.				Animal burrows must be backfilled and compacted. Burrowing animals should be humanely removed from the area.	Professional	
	There is more than 1 inch of settlement.				Add fill material and compact the soil to the design grade	Owner or Professional	
	The inlet alignment is incorrect.				Correct immediately.	Owner or Professional	
Vegetation	Plant composition is consistent with the approved plans.				Determine if existing plant materials are consistent with the general Wet Pond design criteria, and replace inconsistent species.	Professional	

Element of BMP	Potential Problem	Problem? Y/ N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Vegetation (continued)	Invasive species are present.				Remove invasive species immediately and replace vegetation as needed.	Professional	
	Trees planted in the buffer and on wetland islands and peninsulas need watering during the first growing season.				Consider watering every 3 days for first month, and then weekly during first year (April – October), depending on rainfall.	Owner or professional	
	Grass around the facility is overgrown.				Mow (at least twice a year) to a height of 4"-9" high and remove grass clippings.	Owner or professional	
	Vegetation is dead or reinforcement planting is needed.				Remove and replace dead or dying vegetation.	Professional	
	There is excessive trash and/or debris.				Remove immediately.	Owner or professional	
Permanent Pool and Side Slopes	There is evidence of sparse vegetative cover, erosion or slumping side slopes.				Repair and stabilize physical damage, and reseed or plant additional vegetation.	Owner or professional	
	There is evidence of nuisance animals.				Animal burrows must be backfilled and compacted. Burrowing animals should be humanely removed from area.	Owner or professional	
	There is significant sediment accumulation.				Conduct a bathymetric study to determine the impact to design volumes, and dredge if necessary.	Professional	
	There is adequate access to the riser for maintenance.				Establish adequate access.	Professional and, perhaps, the locality	
	Pieces of the riser are deteriorating, misaligned, broken or missing.				Repair immediately.	Professional	
Riser/Principle	Adjustable control valves are accessible and operational.				Repair, as needed.	Professional	
Spillway and Low- Flow Orifice(s)	Reverse-slope pipes and flashboard risers are in good condition.				Repair, as needed.	Professional	
	Seepage into conduit There is evidence of clogging.				Seal conduit Clear blockages of the riser or orifice(s) and make other adjustments needed to meet the approved design specs.	Professional Professional	
	There is excessive trash, debris, or other obstructions in the trash rack.				Remove immediately.	Owner or professional	
Dam/ Embankment and Abutments	There is sparse veg. cover, settlement, cracking, bulging, misalignment, erosion rills deeper than 2 inches, or sloughing.				Repair and restabilize immediately, especially after major storms.	Professional	
	There are soft spots, seepage, boggy areas or sinkholes.				Reinforce, fill and stabilize immediately.		

Element of BMP	Potential Problem	Problem? Y/ N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Dam/ Embankment and Abutments (continued)	There is evidence of nuisance animals.				Animal burrows must be backfilled and compacted. Burrowing animals should be humanely removed from the area.		
	There is woody vegetation on the embankment.				Removal of woody species near or on the embankment and maintenance access areas should be done when discovered, but at least every 2		
Overflow/Emer gency Spillway	There is woody growth on the spillway.				Removal of woody species near or on the emergency spillway should be done when discovered, but at least every 2 years.	Owner or professional	
	There is excessive trash, debris, or other obstructions. There is evidence of erosion/backcutting				Remove immediately. Repair erosion damage and reseed	Owner or professional Owner or professional	
	There are soft spots, seepage or sinkholes. Only one layer of stone armoring exists above				Reinforce, fill and stabilize immediately. Reinforce rip-rap or other armoring materials.	Owner or professional	
Outlet	the native soil. The outlet provides a stable conveyance from the pond.				Stabilize immediately, as needed, and clear blockages.	Owner or professional	
	There is woody growth within 5 feet of the outlet pipe barrel. There is excessive trash,				Prune vegetation back to leave a clear discharge area.	Owner or Professional Owner or	
	debris, or other obstructions. There are excessive sediment deposits at the				Remove immediately. Remove sediment.	professional Professional	
	outlet. Discharge is causing undercutting, erosion or displaced rip-rap at or around the outlet.				Repair, reinforce or replace rip rap as needed, and restabilize.	Professional	
Overall	Access to the facility or its components is adequate.				Establish adequate access. Remove woody vegetation and debris that may block access. Ensure that hardware can be opened and operated.	Professional and, perhaps, the locality	
	Fences are inadequate				Collapsed fences must be restored to an upright position. Jagged edges and damaged fences must be repaired or replaced.	Professional	
	Water levels in one or more cells are abnormally high or low.				Clear blockages of the riser or orifice(s) and make other adjustments needed to meet the approved design specifications.	Professional	
	Complaints from local residents				Correct real problems.	Owner or professional	

Element of BMP	Potential Problem	Problem? Y/ N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Overall (continued)	Mosquito proliferation				Eliminate stagnant pools and stock the basin with mosquito fish to provide natural mosquito & midge control. Treat for mosquitoes as needed. If spraying, then use mosquito larvicide, (e.g., Bacillus thurendensis or Altoside formulations) only if absolutely	Owner or professional	
	Encroachment on the pond or easement by buildings or other structures				Inform involved property owners of BMPs status; clearly mark the boundaries of the receiving pervious area, as needed	Owner or professional (and perhaps the locality)	
	Safety signage is not adequate.				Provide sufficient, legible safety signage.	Owner or professional	

APPENDIX R

Example Notice of Corrective Action

[Date]

[Addressee]
[Name of Company]
[Street Address]
[City, State, Zip Code]
Via [Certified Mail or Hand Delivered]

RE: Notice of Corrective Action
[Project Name, Location, VSMP Permit No.]

Dear [Addressee]:

On [Fill in date of inspection.], the Campbell County staff inspected the [Fill in the name of construction site and VSMP Permit number.] for compliance with the Virginia Stormwater Management Program (VSMP). During the inspection, staff observed the following conditions:

[Describe the offending conditions. Use bullets. For example:

- 1. A significant amount of sediment had left the site and accumulated in an adjacent wetlands area.
- 2. At the time of inspection, a review of facility records revealed that inspections had not been performed at the required frequency.
- 3. The Stormwater Pollution Prevention Plan (SWPPP) was not available onsite at the time of inspection.]

An inspection report documenting these observations is attached.

[Include any relevant facts that may help explain the situation (e.g., the person with whom you spoke, what was said, etc.) [Include if relevant and helpful--During prior inspections conducted on {Give dates of any previous inspections}], staff observed similar conditions. Please see the attached inspection reports.]

[*Include relevant citations.*]

The VSMP Regulations at [Fill in citation.] require that [State requirement]. [For example:

1. The VSMP Regulations at 9VAC25-880-70 Requires that escaped sediments be removed to minimize off site impacts;]

[Addressee] [Date] Page 2 of 2

While Campbell County makes no determination at this time regarding the observations documented by the staff, there appear to be discrepancies between the conditions observed at the [Fill in name of site.] and the requirements of the VSMP governing those conditions. Please contact [Fill in Inspector's name.] within five days of the date of this letter [Fill in date.] either to explain the apparent discrepancies or to describe any relevant changes in the conditions at the site. [Allow five days if you deliver the NOCA by hand and 10 days for certified mail].

The purpose of this letter is to provide you with information Campbell County has gathered regarding the [*Fill in name of site.*] and to solicit additional information from you regarding conditions observed at the site. This letter is not a case decision as defined in the Virginia Administrative Process Act, Virginia Code § 2.2 - 4001.

If the alleged discrepancies described above cannot be resolved to the satisfaction of Campbell County within the time allotted, Campbell County will pursue formal enforcement action regarding the allegations in this NOCA. The Virginia Stormwater Management Act provides for civil penalties of up to \$32,500 per day for any violation of the Act, the VSMP Regulations, or any condition of a permit issued pursuant to the Act.

If you have any questions regarding the above, please contact me at XXXXXX.

Sincerely, Campbell County

[Author's Name] [Title]

[Enclosure or Attachment]

cc: